SOAP AND CHEMICAL SPECIALTIES

MAY 1959



IN THIS ISSUE



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flavor bases
dry soluble seasonings
essential oils
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perfume bases

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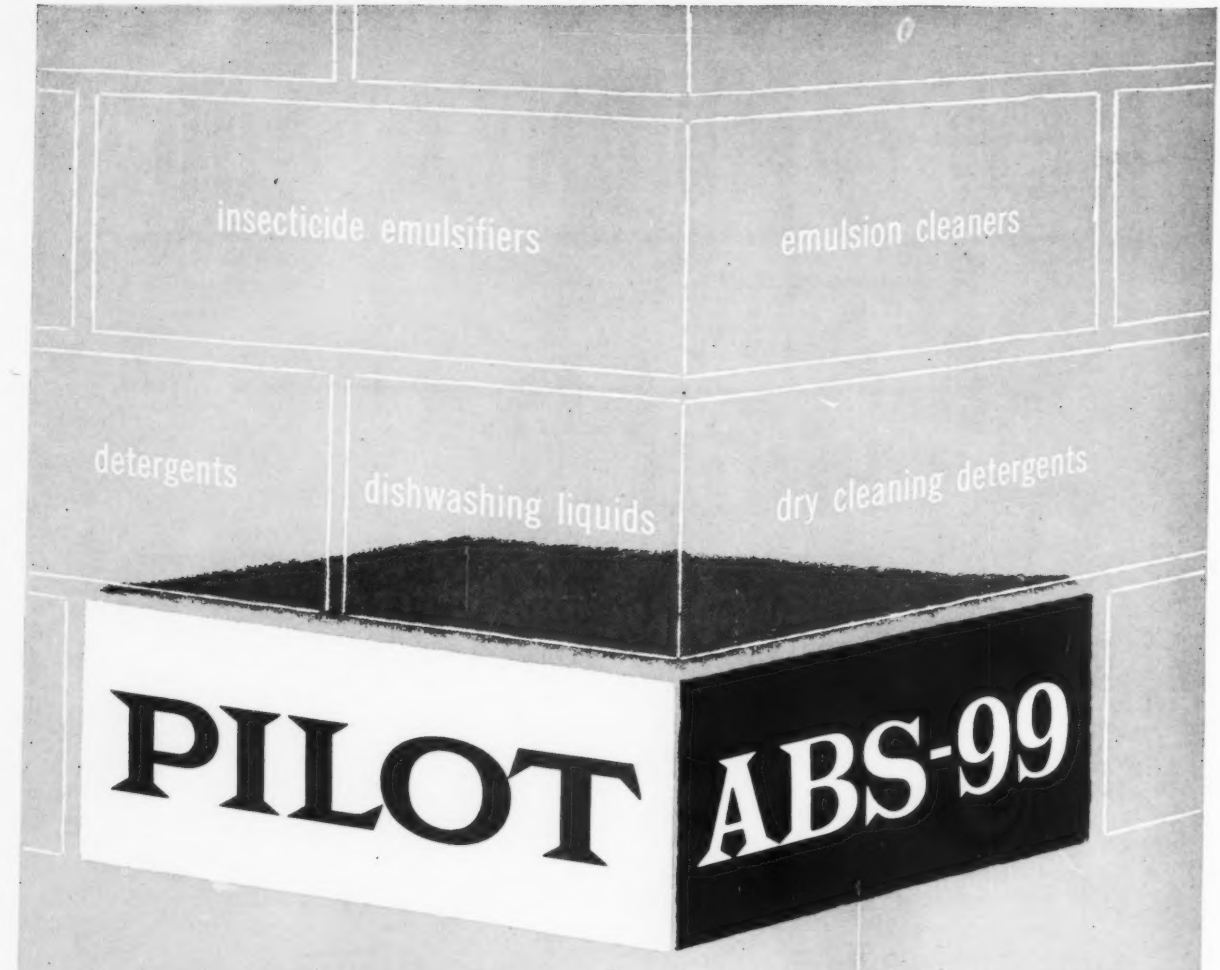
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Volume XXXV, No. 5—May, 1959

Cover photo: Two of five "prescription" type shampoo concentrates being introduced by Realistic Co., Cincinnati, for professional beauticians. Contents of one pint, distinctive glass bottles by Anchor Hocking Glass Corp. are mixed with cold water to make one gallon of professional shampoo. Each shampoo has its own color. Molded plastic caps are by Owens-Illinois.



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FRANK J. REILLY
Editor

CHARLOTTE HAAS
Associate Editor

EDWARD BLOCH
News Editor

THOMAS MORGAN
Advertising Manager

ALVIN PLOFSKY
Production Manager

ESFERA FAY
Circulation Manager

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GRANT A. DORLAND
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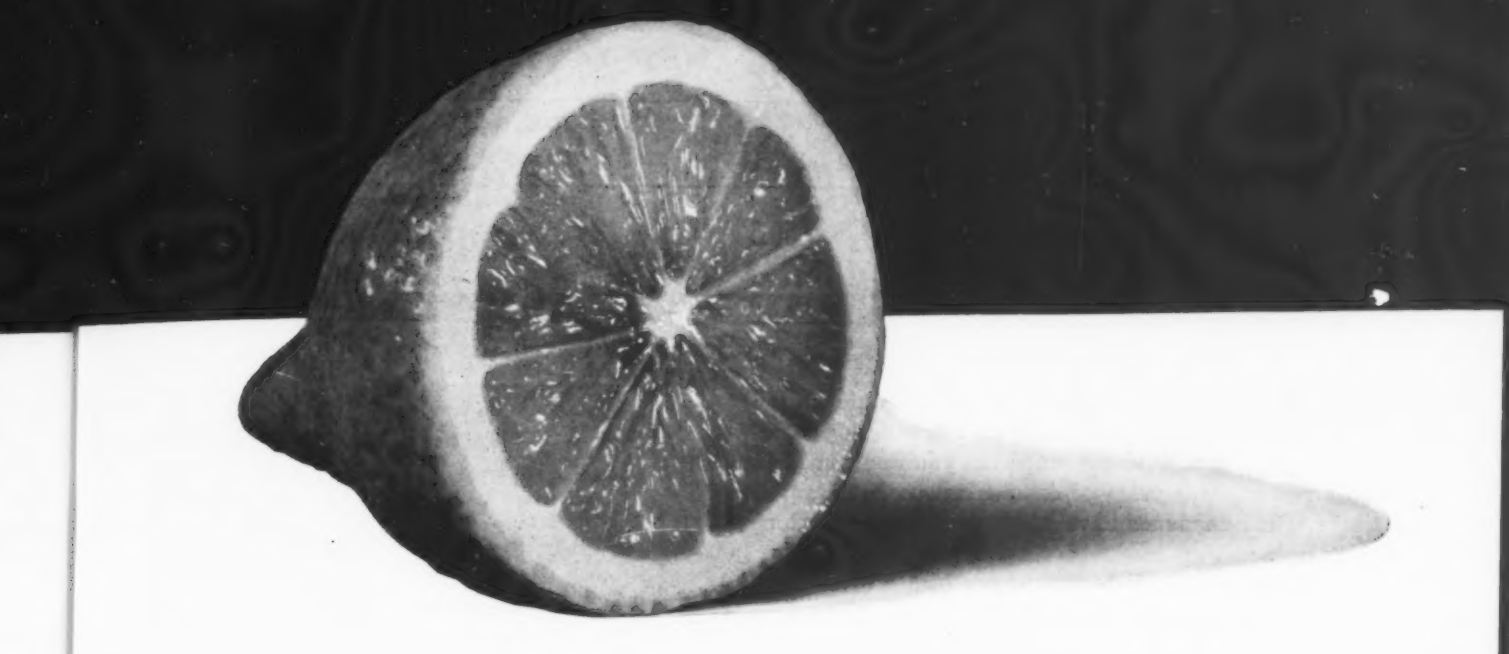


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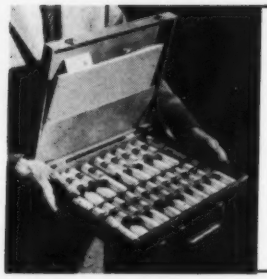
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ACL 60	$Cl_2Na(NCO)_3$	61	1	2	3
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*based on cost per pound of available chlorine

Monsanto's versatile ACL line of chlorinated cyanuric acids gives you low-cost formulating "flexibility" to achieve the properties you want most. In nearly three years of commercial use, job-proved ACL compounds have stimulated sales of machine dishwashing products, chlorine scouring powders, industrial sanitizers and of dry bleaches for home and commercial laundries. With four ACL compounds, Monsanto can draw on this experience plus knowledge gained in five years of intensive research to help you formulate for new growth.

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CANDY'S SUPREME Special WR
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Initial appearance is important, but for a waxed surface to remain beautiful, it must be durable. Durability depends not only on resistance to abrasion of traffic, but even more so on resistance to discoloring marks. Durability should be measured by how long the waxed surface maintains a nice appearance before complete removal and re-waxing is required.

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FLORANOL An ester to achieve the natural character in Synthetic Rose to which it adds that slight apricot fruitiness found in the fresh flower. Reasonable in price, stable, non-irritating and non-coloring, it is of inestimable value to the perfumer.



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U.S.I. CHEMICAL NEWS

May ★ A Series for Chemists and Executives of the Solvents and Chemical Consuming Industries ★ 1959

First Technical Book On Aerosols Published

For the first time, complete information on packaging products in pressurized containers has been set down in one place – a 411-page book by Herzka and Pickthall titled "Pressurized Packaging (Aerosols)," now being sold.

Chapters give detailed information on propellents, containers, valves, filling methods, laboratory procedures, emulsion systems and perfumes. Graphs, charts and photos illustrate all chapters, which are followed by lists of literature references and significant patents.

Formulations – over 200 in all – are included, on a wide range of products from insecticides and paints to cosmetics, perfumes and foods. Appendices cover common abbreviations, technical terms, trademarks and trade-names, and aerosol producers throughout the world. The book is considered an extremely valuable reference for both research and development and management groups.

New U.S.I. Sales Office Opens in San Francisco

U.S.I. has established a San Francisco sales office, managed by Kenneth Fietz, who has been a representative of the company's New York Sales Division for the past 16 years. The new office, located at 220 Montgomery Street, was created to serve U.S.I. customers in central and northern California, Oregon and Washington. This office is tied in with U.S.I.'s automated communications system through Pacific Coast headquarters in Los Angeles. This will facilitate the processing of orders and messages by the company's offices and plants in all parts of the country.



H^3-Labeled Methionine Gives Clue to Protein Synthesis in Cells

In a recent study of protein synthesis in the cells of adult mice, DL-methionine labeled with tritium (H^3) was injected into test animals and then traced by radioautography methods. Results revealed that the most active protein synthesis involving methionine takes place continuously and independently within the cytoplasm and nuclear chromatin. Very little protein is synthesized from methionine in the nucleolus.

In this particular study, tritium was used as the tracer element because its low β-ray energy allows good radioautographic resolution. Previous investigations with S^{35}-labeled methionine had shown only that this amino acid is continuously being incorporated into protein in all cells. However, the exact distribution of synthesis in the nucleus and cytoplasm could not be determined up to this time because the high β-ray energy of S^{35} prevented good resolution.

U.S.I. Starts Up 75-Million-Lb. Polyethylene Plant at Houston

Low and Medium Density Resins Being Produced by High Pressure Process. Plans Already Underway to Double Capacity.

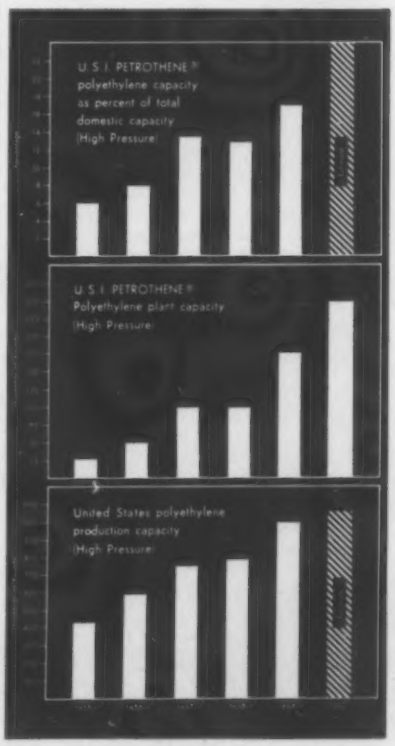
U.S.I.'s new high pressure polyethylene plant has just been put into operation at Houston, Texas, to make 75 million pounds per year of PETROTHENE® resins.

The Houston installation was rushed into production some six to eight weeks ahead of schedule when demand for PETROTHENE resins began to outrun supply late in 1958.

As a result of this demand, a major expansion is already being planned, to double the new plant's capacity and bring the company's PETROTHENE output in Houston to 150 million pounds of high pressure polyethylene per year. At Tuscola, Illinois, U.S.I. now turns out about 100 million pounds of polyethylene annually. Thus, when the planned expansion at Houston is completed late in 1960, total U.S.I. capacity will be 250 million pounds of high pressure resins per year. This will make the company the second largest polyethylene producer in the country.

The new plant is well situated on the Houston Ship Channel for shipment of resins by all means of transportation. Export shipments are facilitated by the extensive port facilities available in Houston. The new installation is assured of a plentiful supply of ethylene – the major raw material – from salt dome storage facilities.

MORE



Oils Solubilized in Alcohol By New Patented Technique

Drug and cosmetic manufacturers can now formulate water-clear, non-aqueous products containing both oils and low-molecular-weight alcohols, via a new solubilizing technique described in U.S. Patent No. 2,865,859 issued recently.

According to the patent, it has never been possible commercially to prepare cosmetic or industrial solutions containing these alcohols plus large quantities of oil. Layering has always taken place. The technique described makes miscibility possible by including low-molecular-weight aliphatic alcohol esters of high-molecular-weight fatty acids.

Mixtures of esters such as ethyl laurate, butyl myristate, amyl oleate, propyl linoleate or isopropyl palmitate are cited. The resulting solutions would contain 20-50% oil, 20-50% low alcohol and 5-20% ester. The oils may be of any class – animal, vegetable or mineral – and the alcohols preferably in the one to five carbon group, such as ethanol, methanol and isopropyl alcohol.

Suggested formulations are given for cosmetic compositions which are claimed highly stable over a wide temperature range for long periods, without separation. Examples include sun-screening compounds, hand lotions, hair preparations, soaps, colognes, antiperspirants and after-shave lotions.

Other suggested fields of applications include metal working compounds, coatings, dry cleaning fluids, hydraulic fluids, biocides and lubricants.

NaK Basis of Prefab High-Temperature Test Loop

A high-temperature test loop, which uses NaK (sodium-potassium alloy) as the circulating medium, is now available as a package unit for research and study purposes.

The loop, designed for 1,000° F, can be employed to examine NaK's natural circulation characteristics, to study oxygen solubility in the alloy, to analyze flowmeter and pump performance, expansion treatment and piping arrangement, to investigate corrosion, mass transfer and metal stress, to design heat exchangers, and to develop pumps.

The unit consists of heaters and coolers, heat exchangers, EM pumps and flowmeters, cold trap, plugging indicators and instruments.

May ★ **U.S.I. CHEMICAL NEWS** ★ 1959

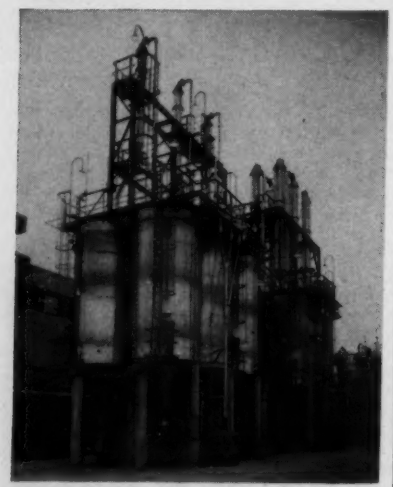
CONTINUED

Polyethylene

Other Resins Under Consideration

The company is now producing low density (.913 – .924) and medium density (.925 – .929) resins at the Houston unit. However, extensive research work has been done on the new high density polyethylenes and a process has been developed which is believed superior to any now used, both from a product quality and production cost standpoint. The process has not yet been commercialized due to the current market conditions on high density materials. U.S.I. is also studying polypropylenes and other polyolefins in pilot plant, and hopes to have more to say about them later in the year.

In less than four years U.S.I. has advanced from a nonproducer of polyethylene resins to its present position as third largest producer in the field. Commencing with an output of 26 million pounds in 1955, production increased to 50 million in 1956, 100 million in 1957, and now 175 million pounds. When the contemplated expansion at Houston is completed, the company will have realized a total increase in production capacity of some 900% since 1955.

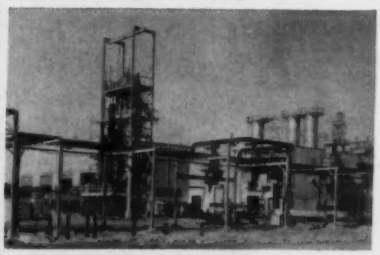


Product storage silos at U.S.I. polyethylene plant, Houston, Texas.

Film Grades a Specialty

Although U.S.I. makes a full line of resins for all applications, much of its growth in polyethylene has been based on special efforts to develop improved coating and film grade resins. Recently the company pioneered a technique for producing crystal-clear cast film. This material has excellent potential in the huge bread wrap field and other large-volume overwrap markets.

Tailor-making resins for specific purposes was originally and still is one of the distinguishing features of U.S.I. as a polyethylene producer. In all, the company markets some 70 resins today, each varying somewhat in melt index, density, strength, clarity, gloss, slip, stiffness and other properties.



Gas-producing area at Houston plant.

Two New Aerosol Formulas Contain Anhydrous Alcohol

Two new formulations – one for a white shoe polish, the other for a stocking-run stopper – have been developed by one chemical manufacturer for consideration by aerosol packagers.

The run-stopping spray consists of equal parts of anhydrous ethanol and a fast-drying adhesive, plus propellant, coloring and perfume. The formula is said to be nonflammable, and is considered stable, although stability tests have not been completed as yet. Recommended filling pressure and method of application are given.

The shoe polish spray – containing an ethanolic solution of PVP/VA, a sebacate, titanium dioxide, glycerine, isopropanol, acetone and propellant – is claimed to eliminate messy handling and to allow easy touch-up. Filling techniques, valve types and pressure are suggested.

TECHNICAL DEVELOPMENTS

Information about manufacturers of these items may be obtained by writing U.S.I.

Radioactive crystalline C^{14}-L-glutamine can now be obtained for in vivo studies of blood-brain barrier permeability and biological utilization of glutamine by brain and other organs. Specific activity of product is 27.8 μ/mg. **No. 1470**

New carbon-monoxide-poisoning test kit now on market determines extent of CO poisoning in a minute by testing exhaled air or in under five minutes by testing blood sample. Color change in treated silica gel indicates % CO in blood. **No. 1471**

Reactor fuel technology is covered in new, 120-page volume now being sold. Includes papers and discussion on economic fuel selection, blanket fuel systems, types of uranium systems, types of fuel elements, cladding and canning. **No. 1472**

Phosphorus pentasulfide safe-handling practices are described in 14-page safety data booklet which can now be purchased. Discusses hazards, protective equipment, containers, waste disposal, first aid, medical care. **No. 1473**

A circular, slide-rule-type of device, which predicts whether a chemical reaction is possible for 10,000 different chemical equations, is now available to chemists and chemistry students. Complete use instructions given. **No. 1474**

Refined ethylene of 99.5% minimum active-ingredient content is described in new data sheet now being offered. Data includes specifications, properties, shipping information, uses plus references on use as ripening agent. **No. 1475**

New analyzer, said to determine amounts of over 20 amino acids in a protein hydrolysate in only 22 hours, is described in new brochure. Results claimed consistent within 2-3%. Typical run shown. Specifications given. **No. 1476**

Cold caustic pulping of mixed hardwoods is detailed in technical report now offered. Includes complete process description, equipment data, flow sheet, quality control tests. Discusses results of studies on pulping variables. **No. 1477**

Niobium and its compounds are described in new book now being sold. Chapters cover sources, supply, economics, extraction, separation, metal preparation, impurities, properties, plating, alloys, reactions, nuclear uses. **No. 1478**

Over 125 radioactive measuring instruments are listed in new 76-page catalog. Detecting, counting and recording instruments are described. Included are systems for research, medicine and education. **No. 1479**

PRODUCTS OF U.S.I.

POLYETHYLENE RESINS

PETROTHENE® is the registered trademark for U.S.I.'s polyethylene resins. PETROTHENE resins are used in a wide variety of end uses such as film extrusion, pipe extrusion, extrusion coating, wire and cable coating, calendering, injection molding, blow molding, thermoforming and compression molding.

OTHER PRODUCTS

Heavy Chemicals: Anhydrous Ammonia, Ammonium Nitrate, Nitric Acid, Nitrogen Fertilizer Solutions, Phosphatic Fertilizer Solution, Sulfuric Acid, Caustic Soda, Chlorine, Metallic Sodium, Sodium Peroxide, Sodium Sulfite, Sodium Sulfate.

Pharmaceutical Products: DL-Methionine, N-Acetyl-DL-Methionine, Urethan USP, Riboflavin USP, Intermediates.

Alcohols: Ethyl (pure and all specially denatured formulas); Anhydrous and Regular Proprietary Denatured Alcohol Solvents SOLOX®, FILMEX®, ANSOL® M, ANSOL PR.

Organic Solvents and Intermediates: Normal Butyl Alcohol, Amyl Alcohol, Fusel Oil, Ethyl Acetate, Normal Butyl Acetate, Diethyl Carbonate, DIATOL®, Diethyl Oxalate, Ethyl Ether, Acetone, Acetoacetanilide, Acetoacet-Ortho-Chloranilide, Acetoacet-Ortho-Toluidide, Ethyl Acetoacetate, Ethyl Benzoylacetate, Ethyl Chloroformate, Ethylene, Ethyl Sodium Oxalacetate, Sodium Ethylate, ISOSEBACIC® Acid, Sebacic Acid, Urethan U.S.P. (Ethyl Carbamate), Riboflavin U.S.P.

Animal Feed Products: Antibiotic Feed Supplements, BHT Products (Antioxidant), Calcium Pantothenate, Choline Chloride, CURBAY B-G®, Special Liquid CURBAY, VACATONE®, Menadione (Vitamin K_3), DL-Methionine, MOREA® Premix, Niacin USP, Riboflavin Products, Special Mixes, U.S.I. Permadry, Vitamin B_{12} Feed Supplements, Vitamin D_3, Vitamin E Products, Vitamin E and BHT Products.

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After Closing

Ruth Candy Dies

Mrs. Ruth Candy, wife of Al. L. Candy, president of Candy & Co., Chicago, died May 1 at the Wesley Memorial Hospital, Chicago, after an illness of three weeks. She was 45 years of age. She was stricken April 13 at the Conrad Hilton Hotel, Chicago, during the National Sanitary Supply Association annual meeting. She was rushed to the hospital in a coma from which she never recovered. Funeral services were held at Trinity Episcopal Church, Wheaton, Ill. on May 8. Burial was at the Memorial Park, Evanston, Ill.

Mrs. Candy was widely known in the maintenance supply field through her activities in the National Sanitary Supply Association and in the Chemical Specialties Manufacturers Association. She was engaged in a wide array of charitable and church activities.

★

McKernan Mfrs.' Rep.

Edward J. McKernan, sales manager of Seaquist Manufacturing Corp., Cary, Ill., aerosol valve maker, has resigned to become a manufacturers' representative, it was learned early this month. Mr. McKernan will handle the Seaquist line of aerosol valves, as well as caps and other aerosol packaging components. Until he has had an opportunity to set up his own office, Mr. McKernan plans to work out of Seaquist's headquarters or his home at 130 James St., Crystal Lake, Ill.

Prior to joining Seaquist in 1953, Mr. McKernan had been with Continental Filling Corp., Danville, Ill., for five years. Earlier, for three years he had been with the research department of Continental Can Co., Chicago. He attended De Paul University in Chicago and the University of Illinois at Champaign, where he studied chemistry. Mr. McKernan served with the armed forces for three years and was a B-17 pilot.



Edward J. McKernan

He is married and has four children.

★

Perfumers Honor Lambert

A dinner in honor of William Lambert, formerly editor of *American Perfumer and Aromatics* magazine for many years, will be sponsored by the American Society of Perfumers, June 17th at the Advertising Club, New York. Mr. Lambert was recently elected an honorary member of the Society.

★

Aerosol Publicity Starts

The 1959-60 publicity program of the Aerosol Division of the Chemical Specialties Manufacturers Association started on its third year May 15 under the direction of the Market Development and Publicity Committee of the Division. Normal Odell Associates, New York pubic relations firm, was engaged to handle the program. Mr. Odell was formerly in charge of the program at G. M. Basford Co. Fred Lodes, Lodes Aerosol Consultants, Inc., chairman of the committee, announced that the new program which was adopted by the committee on May 5, is to run for one year and embrace all features of aerosol publicity to the general public and in distributing channels of the trade. The number of contributors to the publicity fund is reported at 53 companies with collections approximating thirty thousand dollars. A special steering subcommittee will be chosen composed of contributors to work with the public relations agency in activating various parts of the program.

★

DCAT Lunch Date Changed

The date of the spring luncheon meeting of the Drug, Chemical and Allied Trades section of the New York Board of Trade has been changed from Tuesday, May 19, to Monday, May 25. The time and place, 12 noon at the Sert Room of the Waldorf-Astoria Hotel, New York, remain the same. Arthur S. Flemming, Secretary of Health, Education and Welfare, will be the featured speaker at the luncheon meeting.

The Board of Trade recently announced its occupancy of new headquarters at 1 Liberty St., New York 5. Previously located at 291 Broadway in New York, the Board also has changed its telephone number to Bowling Green 9-2600.

★

UBS, Staley to Merge

Plans were announced last month by Paul W. Atwood, president of UBS Chemical Corp., Cambridge, Mass., for the merger of UBS and A. E. Staley Manufacturing Co., Decatur, Ill. UBS will continue to operate as an autonomous unit with its present officers and personnel, and Mr. Atwood is expected to become a director of Staley.

The 53-year old Decatur firm is said to be the second largest wet corn miller in the country and one of the largest soybean processors, producing a variety of chemical derivatives, oils, starches. Annual sales are more than $150 million. The company has tripled its research program during the last four years and early this year broke ground for a research center

in Decatur. Staley's current facilities include a four-story pilot plant and a semi-works plant for the production of polymers.

UBS recently completed a polymer plant in Lemont, Ill., and is currently building a polymer semi-works plant and laboratory in Marlboro, Mass.

In commenting on the merger, Mr. Atwood said that the Staley Co. believes it will make a "significant contribution to the growth and diversification of its product lines" and that UBS feels it "will broaden the scope of our new product development and service."

—★—

Argueso Names Rep.

M. Argueso & Co., Mamaroneck, N. Y., has appointed Clarence Morgan, Inc., Chicago, as its exclusive sales representative in Illinois, Wisconsin, Michigan, Minnesota, and Indiana. The Morgan firm has had 26 years experience in the wax and allied industries, and will maintain complete stocks of Argueso waxes including crude and refined vegetable waxes and "Cerita" industrial waxes.

—★—

New Economics Agency

Economics Laboratory, Inc., St. Paul, Minn., recently moved the advertising of its products from J. M. Mathes, Inc., to Kastor, Hilton, Chesley, Clifford & Atherton, Inc., both New York advertising agencies. The products include "Soilax," "Electrasol," and "Soil-off" cleansers, and the company's institutional division. Economics Laboratory's current advertising budget is more than $1.5 million.

—★—

Sun Earnings Increase

Net income of Sun Chemical Corp., New York, for the quarter ended Mar. 31, 1959, amounted to $187,902, or 12 cents per share, compared with $93,417, or five cents a share, for the corresponding period in 1958. Net sales rose to $12,467,388 from $11,404,777 a year ago.

Study Specialties Wage Rate Change

A MEETING was held in Washington, D. C., last month before the Wages and Hours division of the U. S. Department of Labor for cleaning and polishing preparations, insecticides and fungicides, and the miscellaneous chemicals branch of the chemical and related products industry to discuss the type of wage data that should be collected for a redetermination of the industry's minimum wage rate, and to propose a definition of the industry. The survey will be sent to the entire industry, as defined in the proposed definition, within two or three months, and the data will be tabulated for the basis of wage determination at a public hearing in the near future.

Representing the Chemical Specialties Manufacturers Association, New York, at the meeting were A. A. Mulliken, assistant secretary, and R. L. Ackerly, association counsel. The meeting was conducted by Verl Roberts.

No full scale proceedings on minimum wage determination under the Walsh-Healey Act have been instigated since January 1951 when the minimum wage was increased from 85 cents to $1.00 per hour.

The proposed definition for the miscellaneous chemical products and preparations industry, which will be the scope of the survey, includes the manufacture (including packaging) of:

Specialty cleaning, polishing, and sanitation preparations; surface active agents, finishing agents, and sulfonated oils and assistants; agricultural chemicals; adhesives, glues, mucilage, cements and sizes; gelatin (except dessert preparations); household tints, dyes, and bleaches; bluings; writing inks; essential oils; industrial compounds; automotive chemicals; pyrotechnics and fireworks; refined salt; and solid fuel propellants.

Expressly excluded from the definition are:

Basic industrial inorganic and organic chemicals, including industrial gases and basic plastic materials; cyclic coal tar crudes; prepared photographic developers, fixers, and toners; petroleum gases and petroleum crudes; synthetic rubber; synthetic fibers; explosives and ammunition; soap, glycerine, and synthetic organic detergents for household and institutional use; paints, varnishes, lacquers, japans, and enamels; floor and furniture wax and polish; paint and varnish removers; inorganic color pigments; gum and wood chemicals; whiting, putty, and wood fillers; fertilizers; fatty acids; printing ink; perfumes, cosmetics, and other toilet preparations; bone black, carbon black, and lamp black; and fissionable materials.

—★—

Addresses ISM

Albert J. Burner, supervisor of cleaning standards for the Port of New York Authority and president-elect of the Institute of Sanitation Management addressed a meeting of the New York chapter of the Institute last month. About 200 representatives of industrial firms heard Mr. Burner at the meeting which was held to review basic problems of floor maintenance and to discuss plans for the Institute's annual show and conference scheduled for Sept. 22-24 at the New York Trade Show Building.

In his talk Mr. Burner stated that American industry could save $100 million annually on industrial sanitation if it would "adopt it as a permanent and important part of the management family." He pointed out that although "more than $1 billion is spent annually by management on industrial sanitation," only about "five per cent of the companies have engineered programs of sanitation and a tangible method for evaluating performance." The same techniques of analysis and control that management applies in the production field should also be applied to the cleaning function, Mr. Burner noted. Further waste in industrial sanitation programs is unspecialized, unqualified, and ineffective supervisory control because of low salaries. Mr. Burner's remarks were based on the findings of the Institute's management relations committee.

Honor Jellinek at Perfumers' Symposium

HONORARY membership in the American Society of Perfumers was conferred upon Dr. Paul Jellinek, chief perfumer of Polak's Frutal Works, Amersfoort, Holland, at the group's fifth open annual symposium held April 20 at Essex House, New York. The address honoring Dr. Jellinek was given by Dr. Oliver L. Marton of Shulton, Inc., president of the society who also presented the new honorary member with a certificate.

In his opening address Dr. Marton pointed to the comparatively small number of perfumers and their role in giving employment to vast numbers of individuals all over the world, who are engaged in the production of raw materials, in shipping and marketing them and processing them into the ultimate fragrance. Dr. Marton stressed the economic role of the perfumer's creation as a marketing aid for soaps, toiletries and other chemical specialties.

The meeting then turned to the technical program, arranged by Edward Shuster of van Ameringen-Haebler, Inc., program chairman. Five papers were presented which dealt with various angles of instrumentation in perfumery and with its relationship to the organoleptic method, in other words the perfumer's nose.

"Introduction to Instrumentation," by F. Fearns, van Ameringen-Haebler, Inc., was a brief review of the principles and applications of spectrophotometry and gas chromatography. F. Lohman of Procter & Gamble Co. presented a paper entitled "Aromatics and Natural Raw Materials." Gas phase chromatography, Dr. Lohman pointed out, has proved an important tool for the assay of distilled materials, although its application to this field is only five years old. Data yielded by this efficient and objective method correlate to a remarkable degree with subjective odor evaluations. Joint efforts by the perfumer and the gas phase chromatographer have solved problems bearing on such important perfumery raw materials as ionones, terpineol, geraniol, citronellol, and citronella formosa.

J. S. Jellinek of Polak's

Symposium speakers, top photo, with two Perfumers' Society officers who presided. l. to r.: H. A. Cuttler, E. J. Shuster, A. L. van Ameringen, Dr. Oliver Marton, Dr. F. Lehman, E. C. Fearns, Dr. J. S. Jellinek and V. D. Johnston. In center photo, Dr. Jellinek receives certificate of honorary membership from Dr. Marton, president of the Society. Past presidents of Society appear l. to r. in bottom photo: Jacques A. Masson, Pierre Bouillette, Christian F. Wight, Fred W. Fielding, Ernest Shiftan, Albert J. Dillinger and Dr. Anthony F. Frascati.







Frutal Works, Amersfoort, Holland, contributed a paper entitled "Raw Materials and Aromatics from the Supplier's Angle." The use of organoleptic and instrumental methods side by side in the evaluation of aromatics has become common practice, Dr. Jellinek said. While this approach offers definite advantages, difficulties may arise in cases where highest chemical purity is not accompanied by highest quality as an odorant. Dr. Jellinek gave some examples illustrating such dilemmas. A decision must be made in such cases whether the nose or the instruments should have the final say in accepting or rejecting the odorant.

Arguments can be advanced to support either policy, the speaker pointed out. On the whole the industry has not yet taken a definite stand on this issue. The author expressed the belief that producers of fragrances to be incorporated in mass consumer goods, such as soaps, detergents, etc. will place growing emphasis upon chemical and physical specifications. However, the nose will remain the main criterion in the evaluation of perfumery materials intended for luxury products, Dr. Jellinek predicted.

"Instrumental Methods of Analysis and the Perfumer" was the subject presented by V. D. Johnston of Givaudan-Delawanna, Inc. Mr. Johnston also dealt with analytical work making combined use of ultraviolet and infrared spectrophotometry and gas/liquid chromatography with organoleptic evaluations. He illustrated this combined approach with a number of examples.

H. Cuttler of Revlon, Inc., spoke on "Raw Materials and Finished Perfume Products." In his opinion instrumental methods of analysis when applied to perfumery, raw materials and finished compounds, are at best supplementary in their present stage of development. While these methods are undoubtedly a valuable aid to the perfumer in problems of analysis and synthesis of odorous materials, the author believes that in the ultimate evaluation there is no substitute for the experienced nose of the perfumer.

In presenting Dr. Paul Jellinek with the honorary membership certificate, Dr. Marton briefly traced his career which started with a Ph.D. degree from the University of Vienna, Austria, in 1922. Dr. Jellinek was production manager with Calderara & Bankmann in Vienna, one of Austria's foremost soap toiletries manufacturers. He was president of the Austrian Perfumers and Soapmakers Society from 1924 to 1928. From 1928 to 1938 he was chief perfumer with Haarmann & Reimer in Holzminden, German and in 1938 he emigrated to Holland became chief perfumer at Polak's Frutal Works, a position he still holds today. In 1946 Dr. Jellinek spent nine months at the Long Island City, N. Y., plant of Polak's Frutal Works. Dr. J. Stephen Jellinek, one of the speakers at the symposium, is his son who is following in his footsteps.

When political conditions in Europe forced the elder Jellinek to go underground in Holland for 18 months he wrote two books: "The Practice of Modern Perfumery" and "The Psychological Basis of Perfumery."

In addition to the two Jellineks, father and son, distinguished guests from abroad attending the symposium included: Dr. William A. Poucher, of Yardley's, London, England, an honorary member of the society; Francois Goby of Tombarel Freres, Grasse, France; Jean Maubert, P. Robertet & Cie., Grasse; Robert Brady of Colgate-Palmolive Co., Sydney, Australia, and Leopold Rodes of Colgate-Palmolive Co., Soa Paulo, Brazil.★★

Starch Co. Changes Name

National Starch Products Inc., New York, announced last month plans to change its name to National Starch and Chemical Corp., effective May 8. In addition to its interest in starch and starch derivatives the firm is one of the two largest producers of vinyl acetate polymers and copolymers in emulsion form, according to Frank K. Greenwall, chairman. It is felt that the new company name reflects more accurately the firm's current activities and role in industry.

★

MGK Mails Reprints

McLaughlin Gormley King Co., Minneapolis, has mailed to prospective overseas accounts approximately 1,100 reprints of an article describing experiments on outdoor fly repellents which appeared in the November 1958 issue of *Scientific Insect Control*, a bulletin published by The Institute of Insect Control at Kyoto University, Kyoto, Japan. In the article, Yasunosuke Ikeda reports on a method of determining the effectiveness of fly repellents outdoors and compares the effects of several commercial repellents against certain species of flies. Mr. Ikeda states that "MGK Repellent 11" was the most effective among the products tested and was especially efficient in the presence of food, making it desirable for home use. Seven species of flies were collected in the tests.

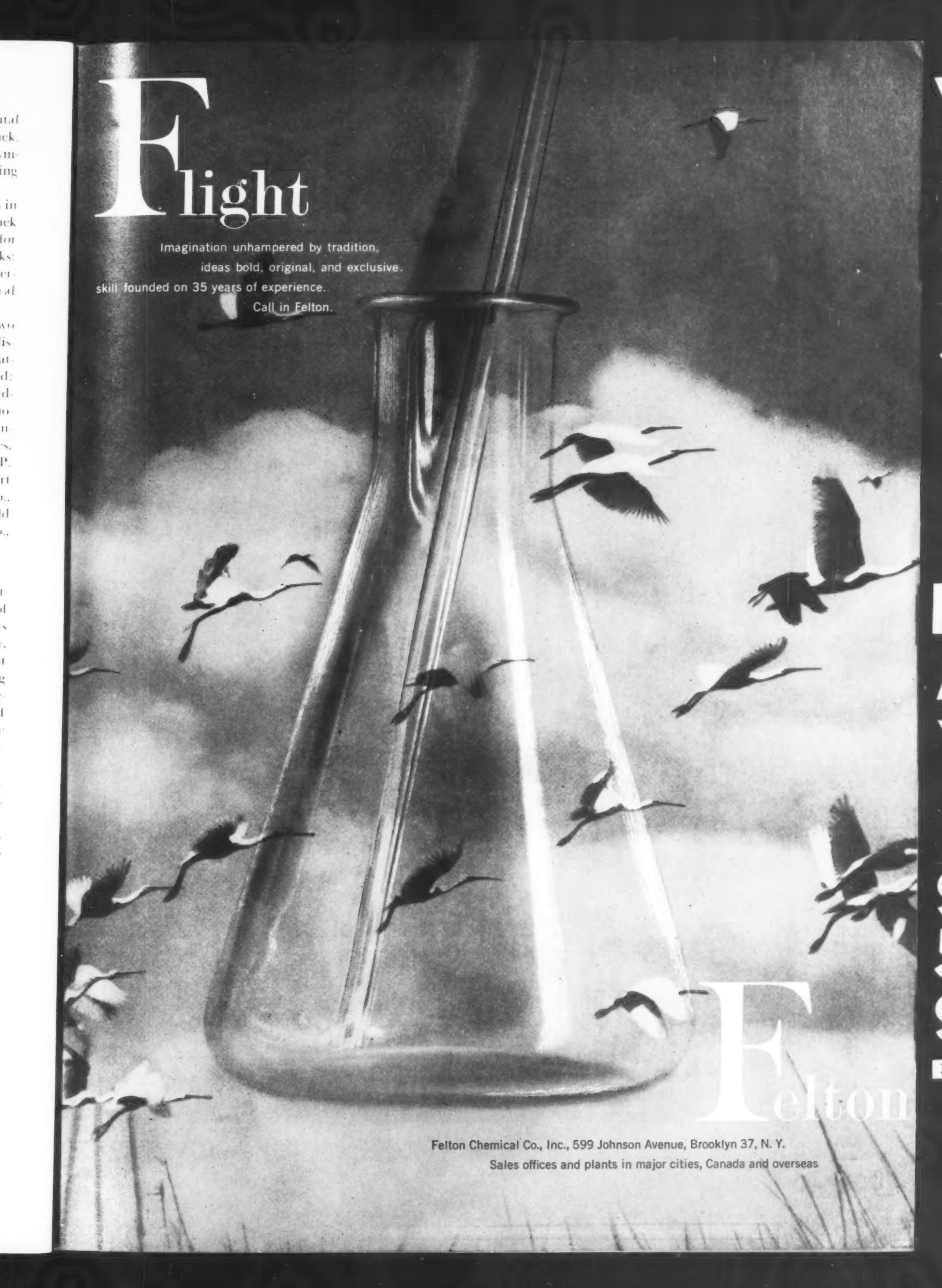
MGK recently issued bulletins describing repellents "MGK 11" and "MGK 326" which may be obtained from the company, 1715 Fifth St., S.E., Minneapolis 11, Minn.

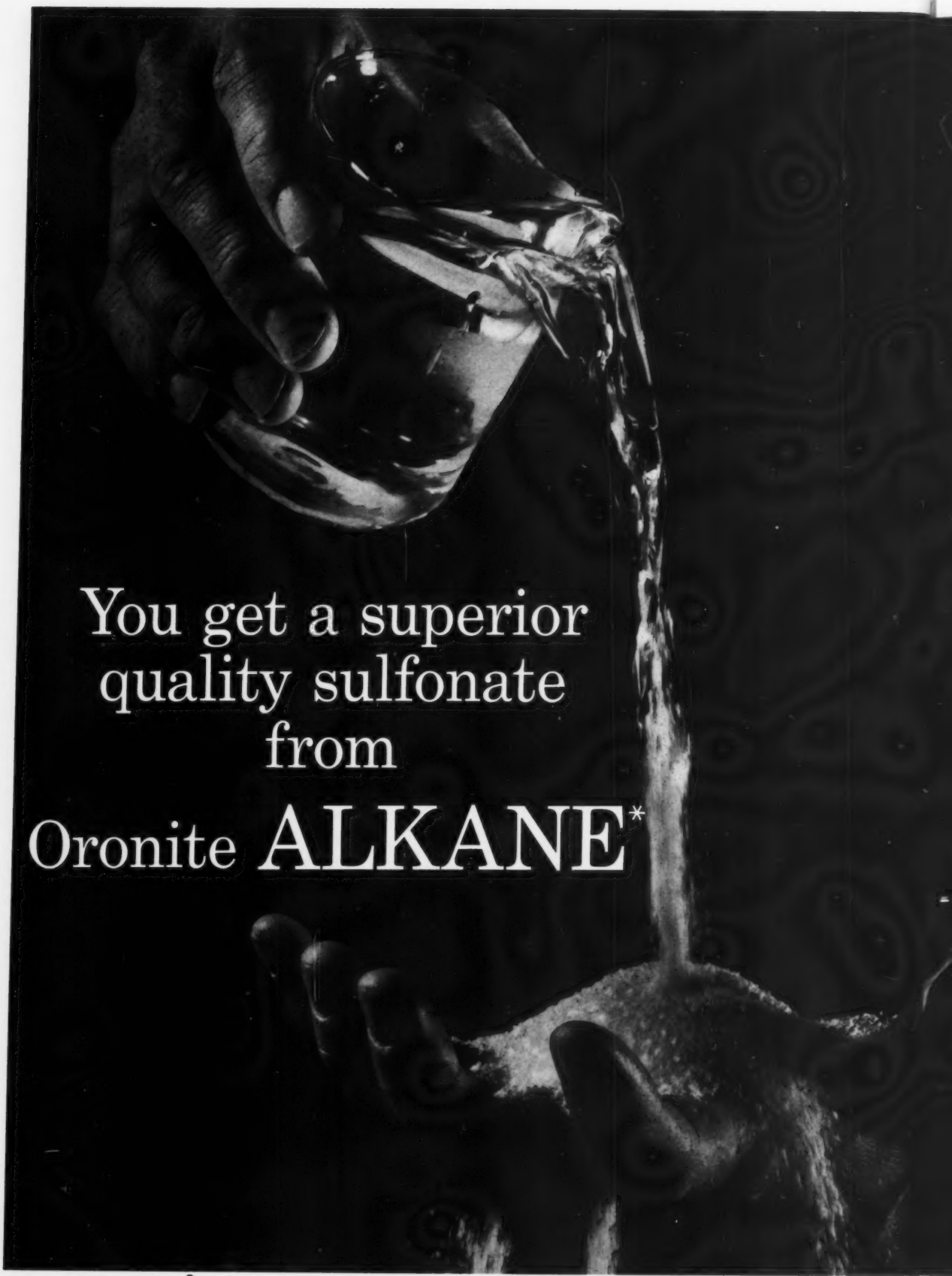
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BIMS Ladies' Night

BIMS of Boston's sixth annual Ladies' Night was held at the Weston Golf Club, Weston, Mass., on April 25th. More than 100 people attended the event. Hart Harris, Jr., S. B. Penick & Co., New York, was in charge of arrangements.

The next BIMS event will be a golf outing on June 18th at the Hatherly County Club, Scituate, Mass. F. J. Hailer, Jr., is host.

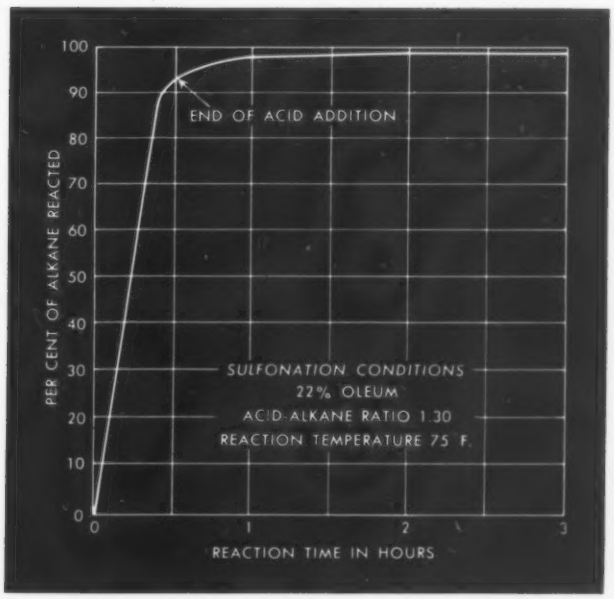

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LABORATORY SPECIFICATIONS

PRODUCT— PROSOL SA-3404

Description— Alkanolamide-polyoxyethylene glycol (Pat. Pending)

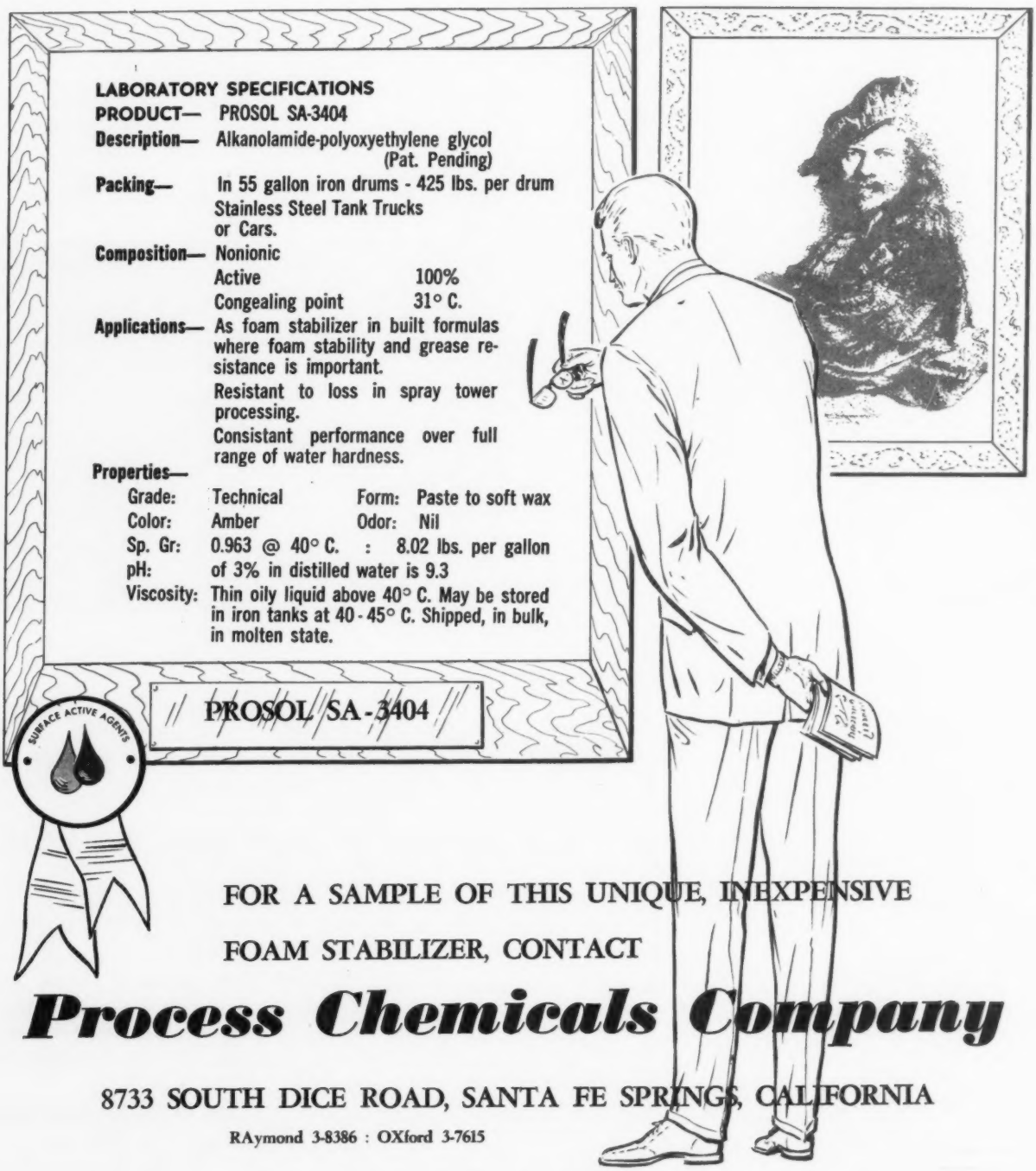
Packing— In 55 gallon iron drums - 425 lbs. per drum
Stainless Steel Tank Trucks or Cars.

Composition— Nonionic
Active 100%
Congealing point 31° C.

Applications— As foam stabilizer in built formulas where foam stability and grease resistance is important.
Resistant to loss in spray tower processing.
Consistant performance over full range of water hardness.

Properties—
Grade: Technical Form: Paste to soft wax
Color: Amber Odor: Nil
Sp. Gr: 0.963 @ 40° C. : 8.02 lbs. per gallon
pH: of 3% in distilled water is 9.3
Viscosity: Thin oily liquid above 40° C. May be stored in iron tanks at 40 - 45° C. Shipped, in bulk, in molten state.

PROSOL SA-3404



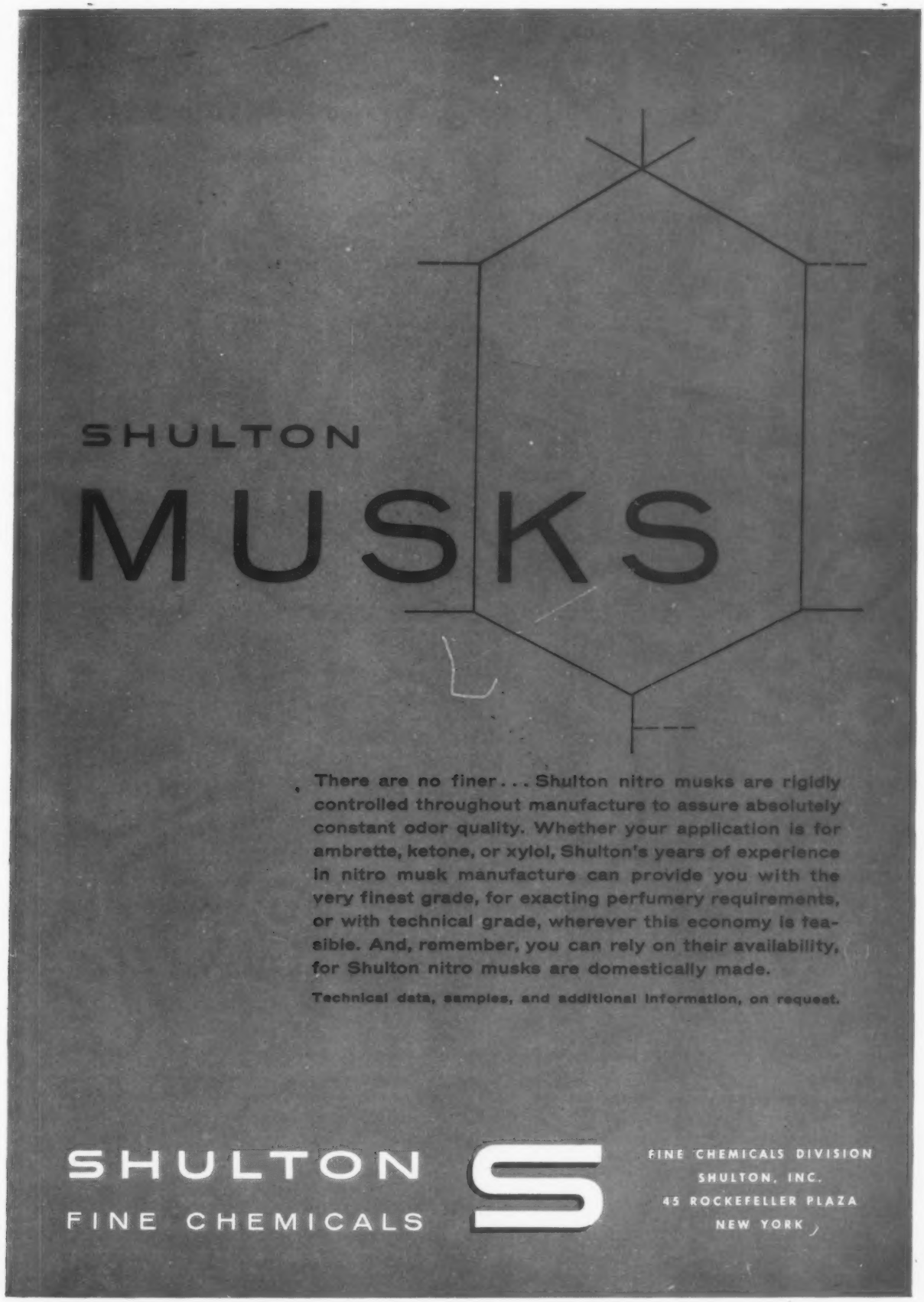
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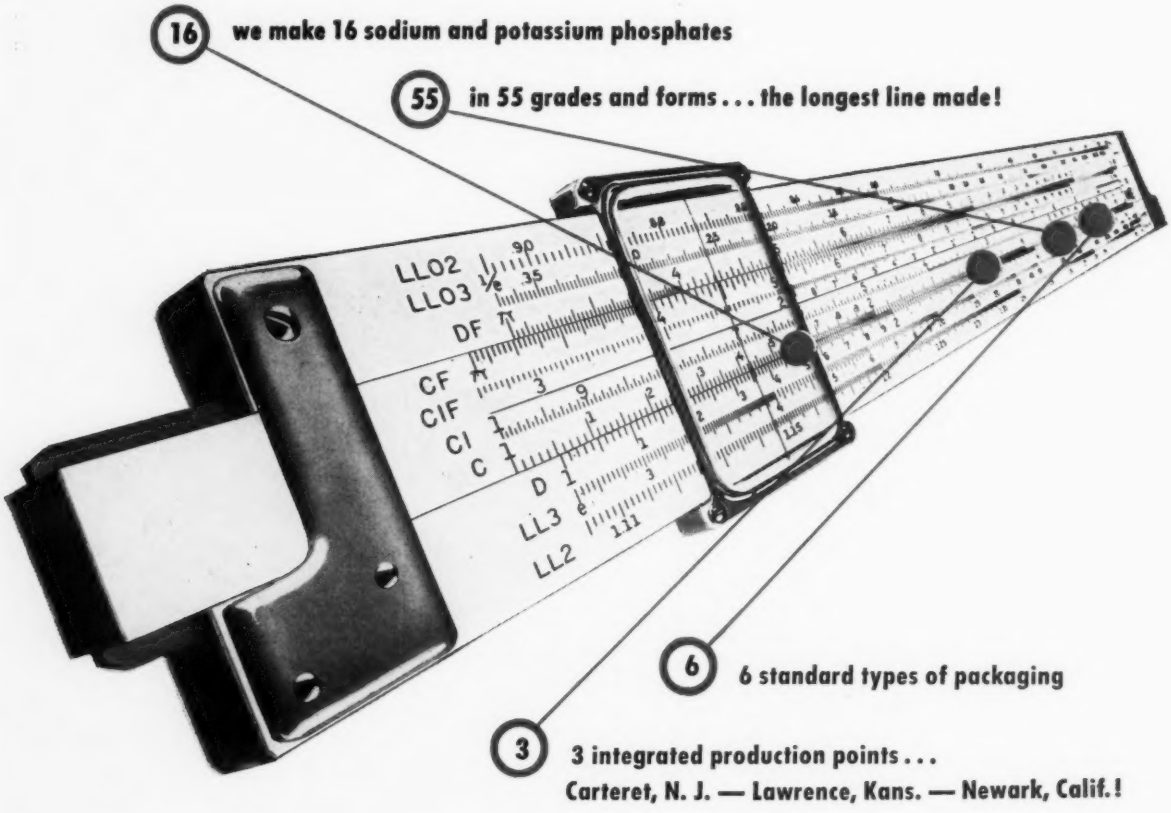
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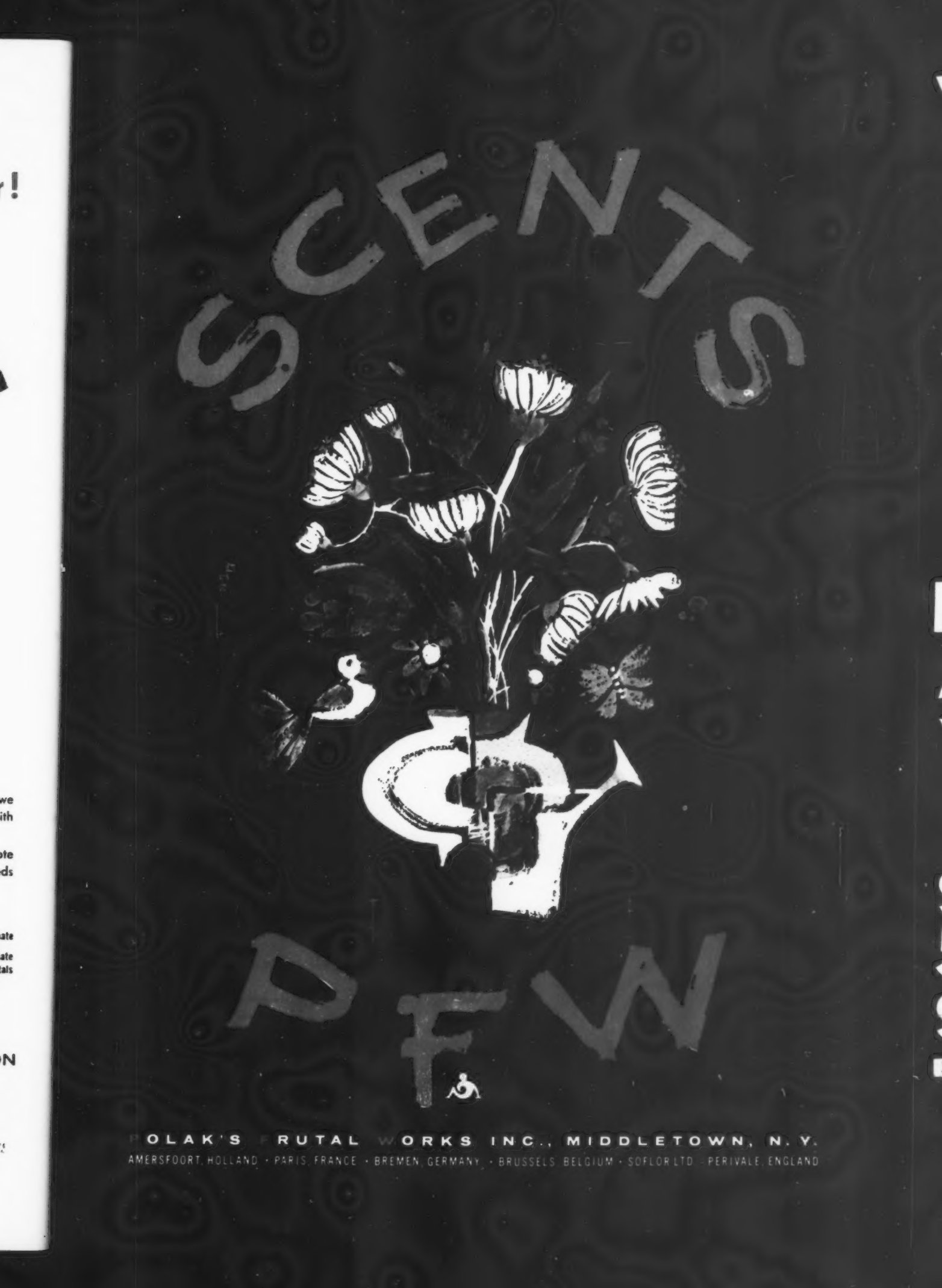
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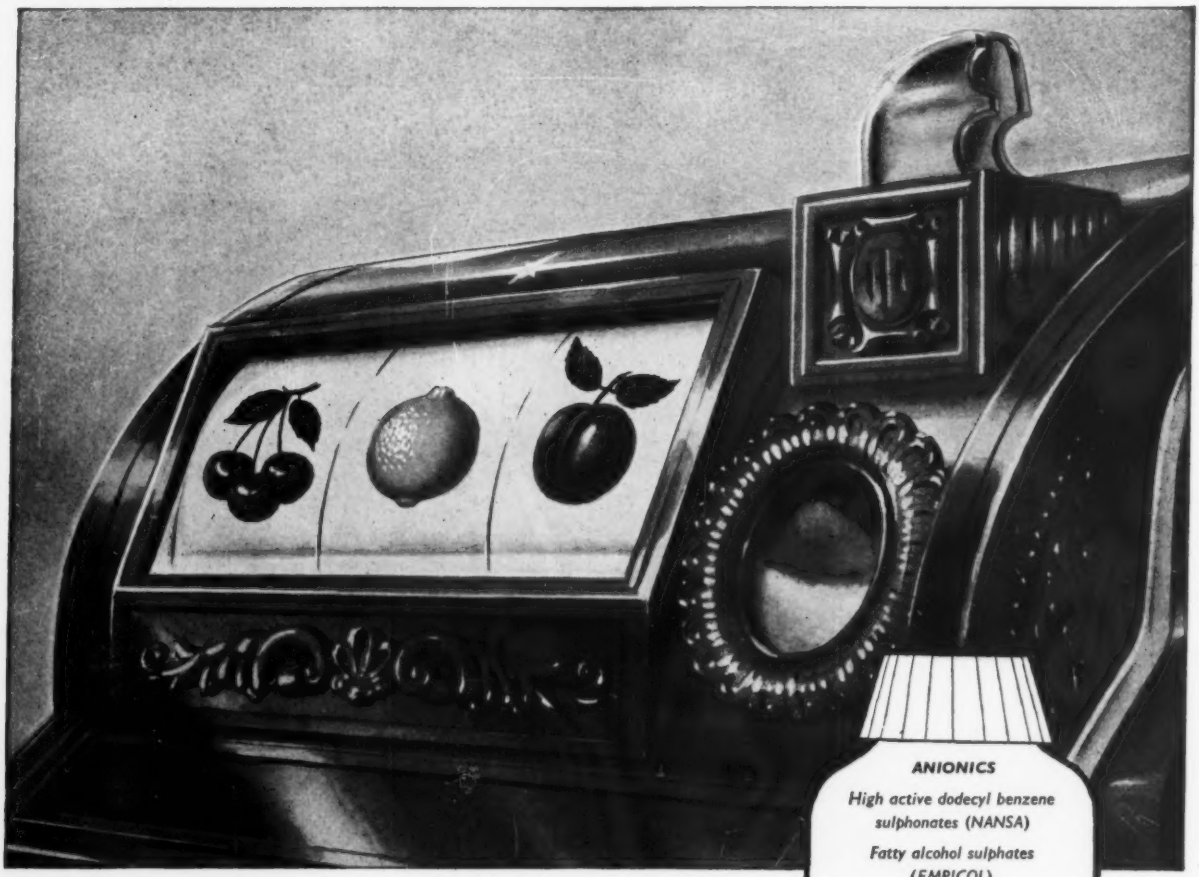
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Igepal DJ-970 flakes dissolve quickly, do not gel, are brittle rather than waxy and have a high melting point (52°C/125°F).

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The soap and chemical specialties industry has a hearty and diversified appetite for polyols as intermediates, plasticizers, emulsifiers, lubricants, antifoamers, solvents and other uses. That's why so many producers take their list of polyol requirements straight to the "men who make the most of them".

Nowhere in the world . . . literally . . . can manufacturers find such a wide selection of polyols as is available from Dow. This is a convenience, of course. But it's also profitable in other ways. The service is better. The storehouse of experience is fuller. And the newest polyols are apt to be found in the "polyol supermarket" first.



Picking the right polyol can mean the difference between profit and loss to many formulators.

Propylene Glycol U.S.P. is a good example of why polyol business is rushing. The unequaled combination of properties of this widely used polyol has made it practically a staple item to manufacturers of many chemical specialty products.

In lotions, creams, soaps and other products, Propylene Glycol U.S.P. serves as an emulsifier aid, solvent, wetting agent, preservative . . . whatever the script demands of this versatile performer.

Polypropylene Glycols are in demand as antifoam agents in paints and serve as lubricants and solvents in many other chemical products. In fact, chemists are able to blend polypropylene glycol properties to suit their needs, simply by combining various members of the Dow series.

Nothing to sneeze at is the possibility that glycol formulations may play a big part in new aerosols being developed as space sanitizers. Several universities have instituted and completed studies in the development of this field.

The world's widest line of polyols is getting ever wider as Dow technical service and development constantly come forth with new polyols to

serve specific needs. Recent additions to the line, for example, are Hyprose®, for use as surface-active agent, intermediate, plasticizer and urethane cross-linking agent; and Hyprin®, which shows promise as plasticizer and alkyd resins intermediate.

As a basic producer of ethylene oxide and propylene oxide, Dow has been in a position to accommodate the rapidly expanding produetion needs for these chemicals and their derivatives. Qualified polyol experts are always available to help the customer find what he wants . . . or to help him discover what he needs from the "polyol supermarket".

AROMATICS:
they help make sales scents

The sweet smell of success for many soap and cosmetic manufacturers these days comes from the many synthetic essences produced by Dow. And though the essences are synthetic, their sales power is real.

Essences such as coumarin, Dorisyl®, Rosaryl® and Citroviol® are tempting examples of Dow aromatics which have customers following their noses back to the right shelf again and again. The stable character of these synthetic essences makes them persistent salesmen, too. They stay on the job long after more fragile fragrances may have faded and been forgotten.

Chemical inventiveness of Dow aromatic specialists continually searches for new essences to spur sales of soaps, cosmetics and perfumes . . . at a reasonable cost. At the first hint that sales are going stale, manufacturers may avail themselves of Dow's consultation service. It helps make sales scents.

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These chelating agents, manufactured by Dow under the trademark Versene® are solving many metal ion problems that plagued soap sales. Liquid soaps no longer foul dispensers. Shampoos stay crystal clear on standing. And flake soaps compete on an even footing with syndets in moderately hard water.

Versene 100, Versene Powder and Versene Flake are different physical forms of the tetrasodium salt of EDTA . . . most effective of all commercially available chelating agents.

Startling reductions in the cost of Dow chelating agents in recent years have put them within easy reach of soap companies with hard water problems, enabling them to put soap products of competitive price and performance within the eager reach of more customers.

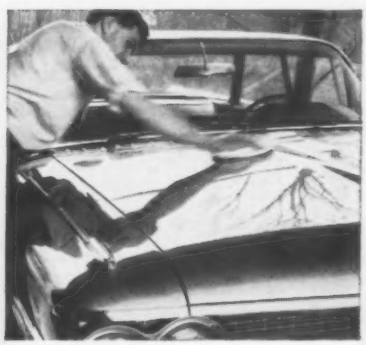
★ ★ ★ ★

If you aren't already profiting from these and other Dow chemicals, discover how you can. We suggest you write for complete information to THE DOW CHEMICAL COMPANY, Midland, Michigan, Chemicals Merchandising Department 971ER5.

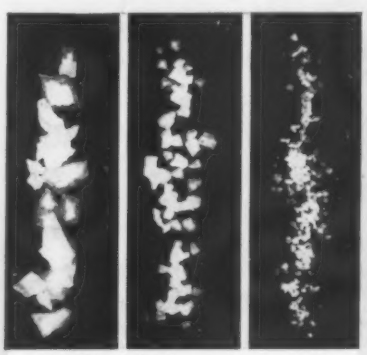
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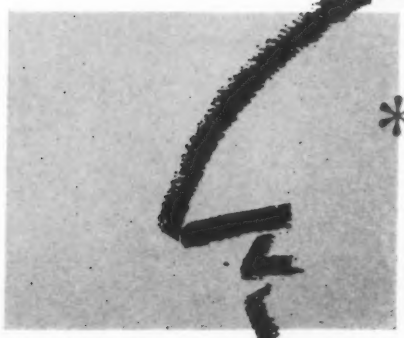
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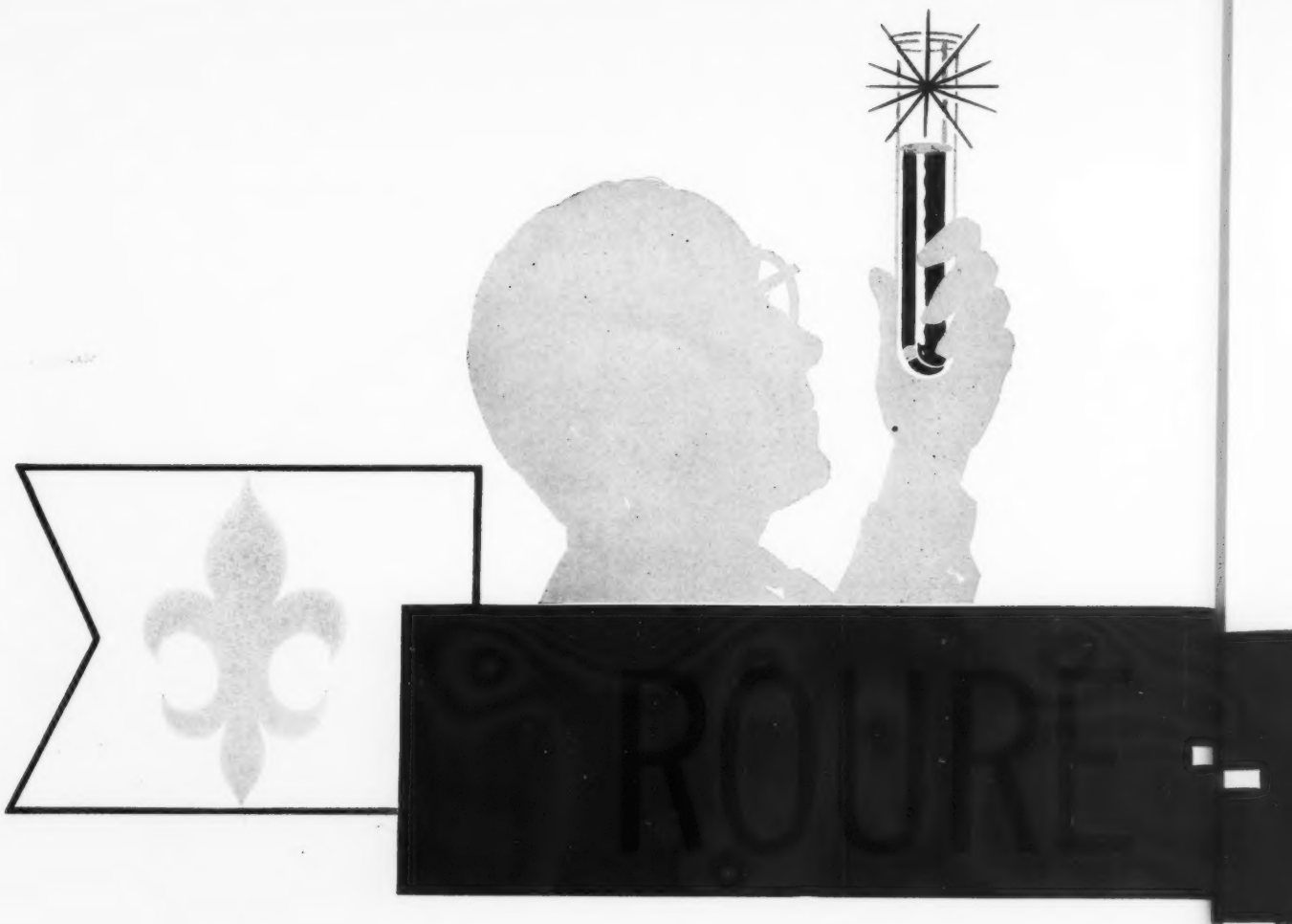
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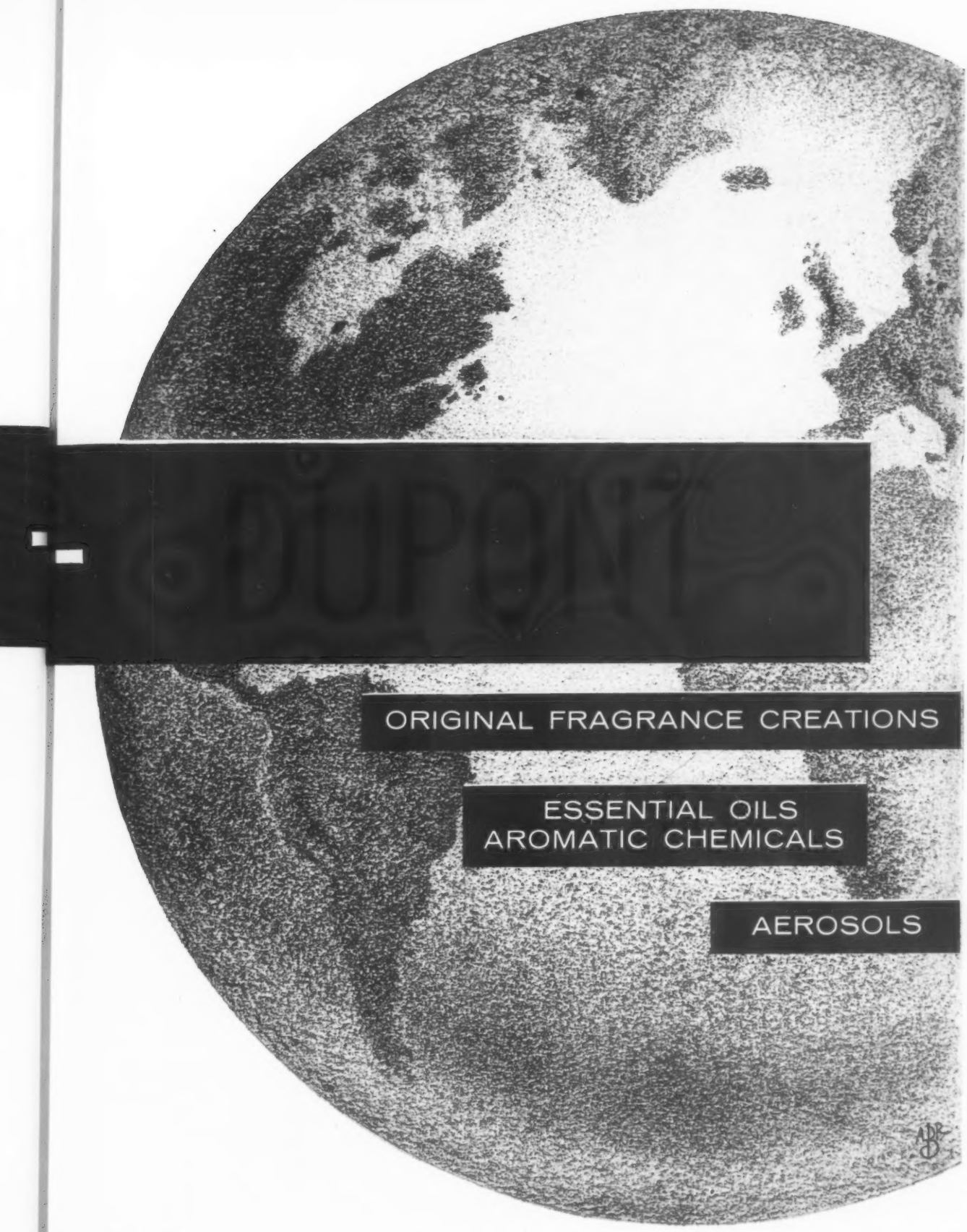
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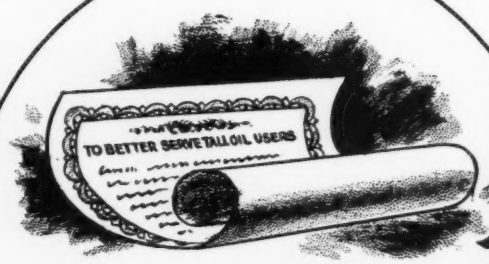
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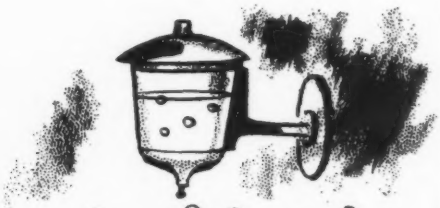
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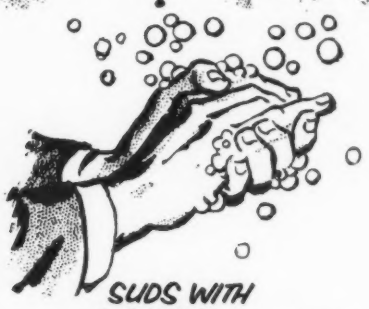
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CHEMICAL COMPANY



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"turn on" more detergent sales with DEMA liquid controllers!



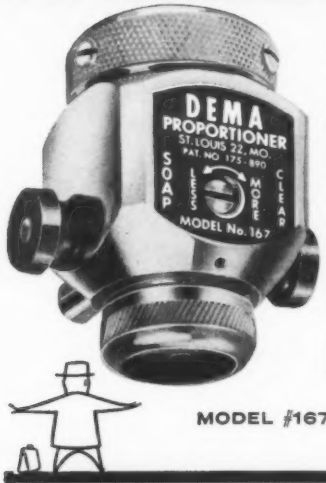
Stainless steel construction makes this Dema proportioner adaptable to a variety of products. Single push-button operation with *anti back-siphoning feature*. Attaches to faucet, connects to bulk container thru polyvinyl tube, gives perfectly proportioned mixture. Resets automatically to clear water.

MODEL #183: Fixed Proportion
MODEL #184: Adjustable Proportion

Here's a real heavy-duty aluminum alloy and stainless steel dispenser designed for waterless hand cleaners and protective creams. Holds factory-filled disposable slip cover cans of any depth. Self-priming, self-lubricating suction pump is push-button operated. No gears or levers to get out of order.



MODEL #310-4: 4¼" Outside Diameter Cans
MODEL #310-5: 5⅛" Outside Diameter Cans
MODEL #310-6: 6" Outside Diameter Cans



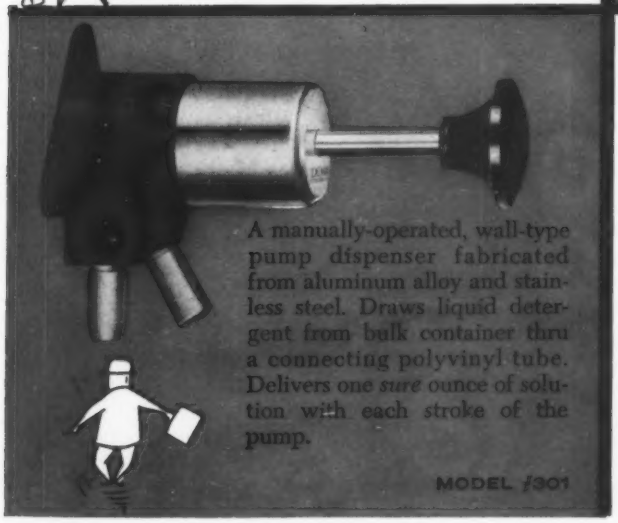
This precision-built, manually-controlled proportioner attaches easily to any faucet. Draws liquid detergent thru a polyvinyl tube, meters it adjustably and gives you push-button selection of proportioned mixture or clear water. Brass constructed with chromium finish.

MODEL #167: Adjustable Proportion

A stainless steel constructed automatic liquid controller suitable for a variety of products. Single push-button operation. Attaches to faucet, draws liquid concentrate from any size container, dispenses it accurately in any desired proportion. Resets automatically to clear water.



MODEL #181: Fixed Proportion
MODEL #182: Adjustable Proportion



A manually-operated, wall-type pump dispenser fabricated from aluminum alloy and stainless steel. Draws liquid detergent from bulk container thru a connecting polyvinyl tube. Delivers one *sure* ounce of solution with each stroke of the pump.

MODEL #301



DEMA

ENGINEERING COMPANY

Designers and Manufacturers of Automatic Dispensing Devices

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Metso Anhydrous is the sodium metasilicate that contains the highest soluble silica (SiO_2) content. Here is a true anhydrous metasilicate because impurities such as sodium carbonate are low.

You will find Metso Anhydrous with its higher SiO_2 content, superior in cleaning action, i.e., wetting out the dirt, emulsifying oily materials and deflocculating loosened particles so that they are dispersed through the solution. Metso's soluble silica in conjunction with the alkali prevents loosened soil from reaggregating and collecting on the cleaned surface. Soft metals such as zinc, tin, and aluminum are readily attacked by solutions of practically every alkali except the silicates. Because of its soluble silica content, Metso Anhydrous has specific protective action upon such metals.

We shall be glad to tell you more about these and other advantages of Metso Anhydrous for your detergent formulations. Have you received our information file "PQ Soluble Silicates for Detergent Formulations"? Return the convenient coupon today.

PQ SOLUBLE SILICATES

Associates: *Philadelphia Quartz Co. of Calif. Berkeley & Los Angeles, Calif.; Tacoma, Wash.; National Silicates Limited, Toronto, Canada*
Distributors in over 65 cities

PQ PLANTS: Anderson, Ind.; Baltimore, Md.; Buffalo, N.Y.; Chester, Pa.; Jeffersonville, Ind.; Kansas City, Kansas; Rahway, N.J.; St. Louis, Mo.; Utica, Ill.

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FILL IN AND ATTACH TO YOUR LETTERHEAD AND MAIL TO
PHILADELPHIA QUARTZ COMPANY,
1152 PUBLIC LEDGER BUILDING, PHILADELPHIA 6, PA.

- ☐ Send us folder "PQ Soluble Silicates for Detergent Formulations"
- ☐ Send us sample of Metso Anhydrous
- ☐ Send us information for using PQ Soluble Silicates in the following compound_____

. . . in brief

as the editor sees it . . .

INSECTICIDES . . . According to the fellows at the U. S. Department of Agriculture, 1959 may not be a particularly good year for insecticides. That is, there may not be too many bugs around. Spring weather conditions and such tip the bug fellows off on what's to come, and after looking into their crystal balls and under a few rocks, their prediction is for fewer bugs than usual. The trouble is that they're generally right. And this is what worries the insecticide manufacturer. Most of the stuff for the 1959 season has long since been shipped and if the insects fail to show up, wholesalers and dealers will not move supplies off their shelves. People rarely buy insecticides in anticipation of later needs. Mostly they wait until the bugs arrive and then they scram out for a can or two of this or that. No bugs, no buy. Then comes next fall and the manufacturers will have a flock of wholesalers shipping back the unsold material. The prospect is not exactly heartwarming. Let's hope that for once in their well-regulated, scientific lives the USDA entomologists are wrong.

* * * * *

PLASTIC BOTTLES . . . Now plastic bottles for liquid detergents have popped into the limelight. Five or six manufacturers and marketers of detergent liquids have been testing out these light weight containers and from what we hear, the reports are quite favorable. So far, we do not know too much about the exact cost, but we believe that if it were not reasonably competitive with glass and metal, the manufacturers in question would be inclined to wait for lower prices.

Last year, something like 400 million cans were used to package liquid detergents. This year, estimates place the figure at 500 million. And there's some millions of glass packages to consider also. And a market which the can and bottle people will certainly not let go by default. Liquid detergents are relatively new products, really the baby of the whole detergent family, —and they are already the center of what could become a packaging dogfight.

What the actual test marketing of the plastic bottle will reveal, nobody will know until all the reports are in. Freight savings? Yes. Other savings? Yet to be determined, if any. Once again, it will take a little time to get all the answers.

* * * * *

MOTHPROOF . . . . After 20 years of work and change, an official method for determining the resistance of textiles to insect pests, particularly moths and carpet beetles, has been adopted by the Chemical Specialties Manufacturers Association. The efforts of a dozen or so leading entomologists operating as a special committee under the Insecticide Scientific Committee of CSMA and dating back to 1939 were involved. And on March 25 last, the CSMA Board approved the test method.

Said John Rodda, chairman of the Insecticide Division of CSMA: "This was really one of the toughest problems ever given to a group of scientists to solve. To the entomologists who have given freely of their time to come up with a real workable test method, CSMA and members of the insecticide industry owe a vote of gratitude. Only those who initiated the work away back in 1939 and those who finally completed the method know the labor involved in this job. But now we have a test method, a product of our finest entomological brains, which we feel certain will stand the test of time as a standard for the world."



Increasingly the product of choice...

SINDAR'S G-11® (HEXACHLOROPHENE U.S.P.)

Here are the facts which have convinced so many leading manufacturers of soaps and cosmetics that G-11 is the most effective germicide and deodorant available.

Deodorant Action: Scientific studies have proved that G-11 remains on the skin even after washing. It therefore provides *continuous* control – between washings – of bacteria that cause perspiration odor.

Proof of Skin Degerming: 40 independent investigators agree that G-11 reduces the bacterial population of the skin by 95% or more. 150 scientific publications attest to its effectiveness. Over 95% of America's hospitals use it for surgical scrub and other purposes.

Consumer Acceptance: More consumers buy G-11 – Hexachlorophene – soaps than any other deodorant bar. Hexachlorophene is known to millions of people.

Soap Compatibility and Stability: G-11 is effective in *all* types – bar, powder, and liquid soaps and detergents. It is also non-corrosive, alkali stable, effective at all pH's.

Non-Irritation of the Skin: Established by its use in billions of cakes of soap and millions of units of cosmetic and pharmaceutical products such as lotions, oils, powders and ointments for babies as well as adults.

Quality: All production meets U.S.P. specifications.

Availability: Immediate shipment of truck or carload quantities from stock. Available around the world.

Technical Service: Sindar discovered hexachlorophene, holds the patents, pioneered its use in antiseptic and deodorant soaps, and is ready to assist you with your technical problems and to supply data on its varied applications.

SINDAR® Corporation
Industrial Aromatics and Chemicals

321 West 44th Street, New York 36, New York

STEEL STRIKE . . . The boys in the back room, it seems, are pretty much agreed that come July 1 and there will be a steel strike. Steel fabricators all over the country have been acting on this supposition for some months. As far as containers are concerned, steel plate is being stockpiled just about as fast as the law allows. Heavy shipments are being brought in from abroad. Dealers have been buying up second hand drums to a point where they are already scarce and high-priced on the open market. Suppliers of steel pails and metal cans are already tightening the reins on buyers.

That cans, steel pails and drums are vital to the chemical specialties business is quite apparent. And until we can ship a disinfectant or a floor wax in a paper bag, they will continue to be vital. Accordingly, we feel that it behooves every manufacturer to prepare to carry himself through the period of the strike as far as containers are concerned. The average guess is that the strike will last from six weeks to two months. The container situation has already tightened up, but there is still opportunity not to be caught flat-footed. Container manufacturers are ready to do everything in their power to keep supplies rolling. But they cannot wet-nurse every specialties manufacturer all the way. Forewarned is forearmed.

* * * * *

PRICES . . . Under the guise of holding prices down and preventing inflation, all sorts of things are happening in Washington. This and that committee of Congress are investigating prices to find out why they are so high. Recently, hearings were held on an anti-inflation bill in the Senate which would require manufacturers to give 30 days notice of price increases. The bill gives the Federal Trade Commission the right to hold public hearings on proposed price increases.

Mostly these investigations and proposed laws are aimed at big companies. But don't let that fool you, brother. It's but a short step to soon include the smaller companies as well. The trend is there. Members of Congress prate of private enterprise and in the next breath urge further restrictions to hog-tie business and industry. Even to telling them when and how they can increase prices. Obviously, they proceed on the premise that all manufacturers are crooks out to mulct the public. And the dear old public must be protected at all costs, — at least in the newspapers.

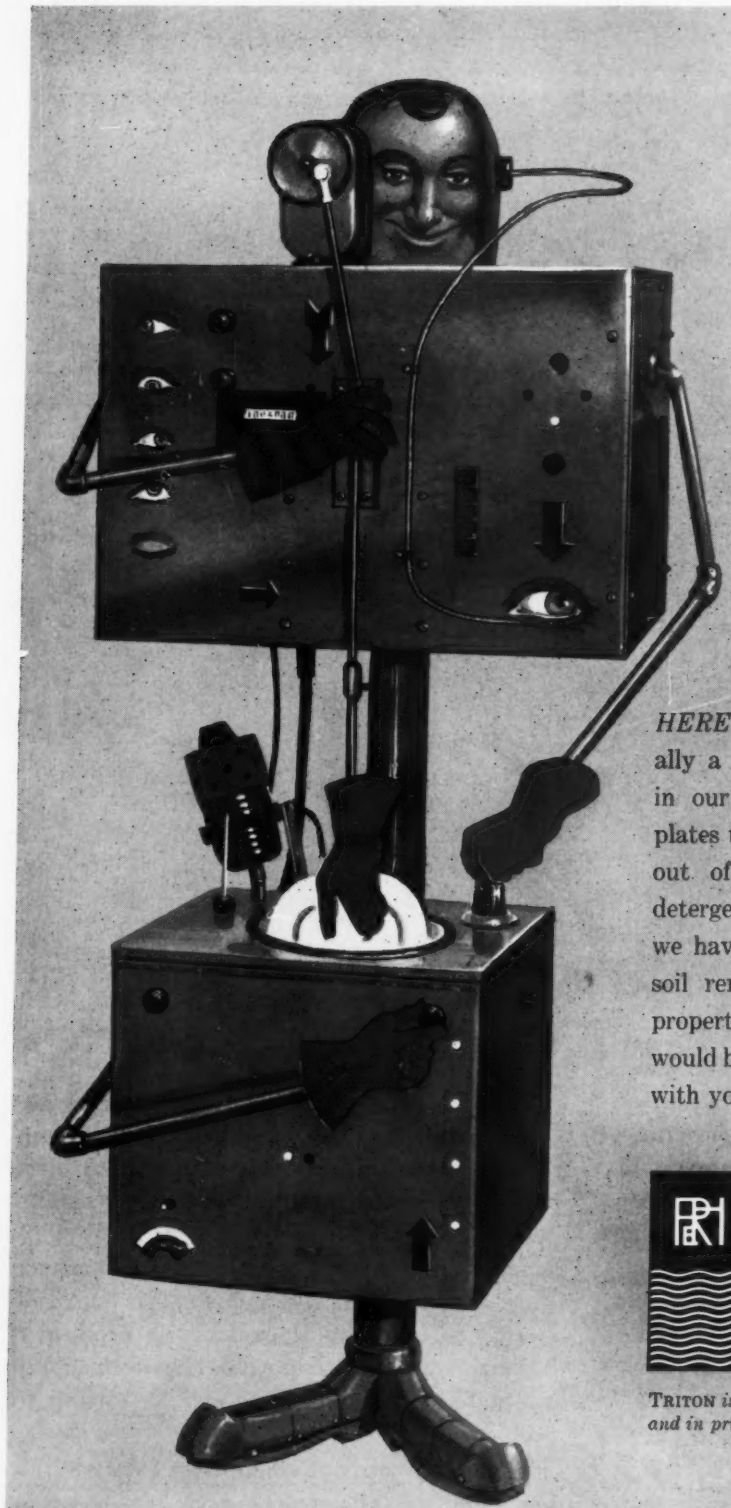
In our humble opinion, American industry has been a congressional whipping boy long enough. This latest alleged anti-inflation bill is a typical example, — an example of the thinking of our legislators, the vast majority of whom never ran a factory, never met a payroll, never made anything, never added one thin dime to the value of this world's goods. And they seem determined to tear down a system which built up our industry and has given us the highest living standard in the world. Are they really serious or is it mostly political window dressing for the folks back home?

* * * * *

GERM KILLERS . . . News recently went out over the wire services that the doctors at Columbia Presbyterian Medical Center in New York had developed a new "germ-killing formula to make hospitals safer." The new formula was found to be "80 per cent effective" in destroying staphylococcus and other hospital bacteria. The product, according to its discoverers, is an organic silver compound. The new material is cheap, they say, and its developers plan to continue tests for at least two more years at the Medical Center.

This new "80 per cent effective" material may come as something of a shock to old-line disinfectant manufacturers. They happen to know that all leading manufacturers have been supplying disinfectants for 25 to 30 years that are 100 per cent effective in destroying staphylococcus. They also know that the industry has been fully aware of the staphylococcus disease problem of hospitals for a year or more and has been supplying materials which are successfully solving the problem.

And now, up pop these doctors with their new and startling development. As a leading manufacturer said to us when he read the article in the papers: "Maybe these doctors should stick to their pills and operations and leave disinfectant developments and manufacture for those who know the score."



DISHPAN DAN

(the laboratory man)

helps improve

DETERGENT FORMULATIONS

HERE'S HOW: Dishpan Dan is actually a custom-made mechanical device in our laboratories. His job: dipping plates treated with standard soil in and out of dishwater containing TRITON detergent formulations. With his help, we have been able to compile data on soil removal, foam stability, physical properties and cost of formulations. We would be happy to share this information with you. Write to us now.

Chemicals for Industry

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WASHINGTON SQUARE, PHILADELPHIA 5, PA.

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TRITON *is a trademark, Reg. U.S. Pat. Off. and in principal foreign countries.*

TRITON SURFACTANTS

as the reader sees it . . .

Blue Book Listing

Editor:

We have just received the "1959 Blue Book and Catalog" of *Soap & Chemical Specialties* and are very surprised to note that our company name has been eliminated from your listing under "Shellac."

The writer can recall years past when we have always had our name mentioned in this listing.

We have been importers and bleachers of shellac for over half a century, and, as you know, the wax manufacturers are probably one of the largest users of shellac and, therefore, we had hoped you would list our name as you have in years past.

John D. Baruc
Haeuser Shellac Co.
Brooklyn, N. Y.

—★—

Unhappy Ending

Editor:

Where is the rest of the article, "Basteriostats in Home Laundry Detergents", by R. E. Vicklund, which appears on pages 56 and 57 of the April issue of *Soap & Chemical Specialties*? The continuation line at the bottom of page 57 says "Turn to page 60", but on doing so I find the ending of a different article.

H. E. B.
Chicago

Hastily and with red face we must admit Mr. Vicklund's very excellent article concludes on page 159, not on page 60 as was erroneously indicated. A last minute switch in continuation lines and a neglected check were responsible for the error. We're sorry. Ed.

—★—

" . . . Just Have to Know"

Editor:

The good advertising man tries to keep ahead of the news. His experienced hunches sometimes almost qualify him for membership in The Seventh Son of Seventh Sons Prophets' Association.

Take the Orbis Products Corporation advertisement which we placed in the April issue of *Soap & Chemical Specialties* (Page 78). Then take a look at the full page, full color news feature on the last page of the April 27th issue of *Life*. Same Uakari, ugly red face and all. He's the first to be featured in Orbis' "Strange Animal" series.

It goes to show you just have to know.

C. Ralph Bennett,
Exec. Vice-President,
and Creative Dir.
Fred Gardner Co.
New York

—★—

"Pleasantly Surprised"

Editor:

I was very pleasantly surprised recently when one of the office girls brought the February issue of *Soap & Chemical Specialties* into the laboratory and I noticed the pictures of my aerosol shave cream brush and the nice writeup you gave me.

Please know that I am deeply grateful to you for giving your time and publicity through your publication to bring my invention to the attention of your subscribers and advertisers.

Should I be fortunate enough to enter into a contract with some company as a result of the publicity you have given me, I would feel it an honor to have you present at the time. You have done something for me that I could not do for myself, and I appreciate it.

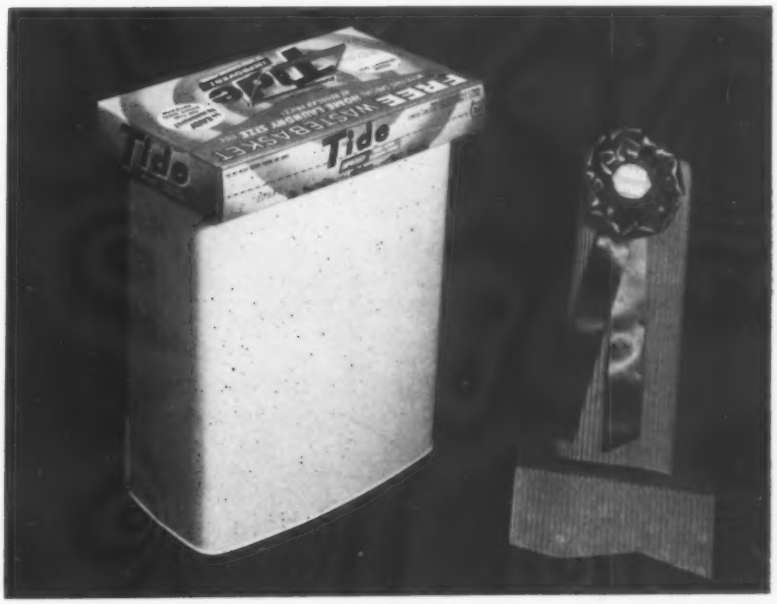
Max E. Oeser
436 Third St., West,
Birmingham 4, Ala.

—★—

Soap Journal Renamed

The *Indian Soap Journal* will change its name, effective with the July issue, to *The Indian Oil and Soap Journal*. A monthly magazine started 25 years ago, the journal is published in Calcutta by the Indian Soap and Toiletries Makers' Association. Dr. M. N. Goswami is editor.

TIDE WINS: Corrugated lid for a waste basket used as premium for "Tide" synthetic detergent won for Procter & Gamble Co., Cincinnati, a "Bronze Ribbon for Distinctive Features" in fifth Fibre Box Competition, sponsored by Fibre Box Assn., Washington, D.C. Container Corp. of America, Cincinnati, made the lid which snaps on top of metal waste basket and offers positive clinching lock.



Kyro EO

A neutral nonionic synthetic detergent of the 100% alkyl-phenol ethylene oxide condensate type. A light-colored liquid with a clean, pleasant odor. Its superior detergent, wetting and emulsifying properties offer excellent performance in liquid detergents, sanitizer detergents, self emulsifying solvents, laundry detergents, glass, textile and dairy cleaners, insecticides, and bottle washing compounds.

AMBER GRANULES

AMBER GRANULES
A neutral 88%, 42° titer-type soap of exceptional purity and uniformity. Well suited for the preparation of paste or gel-like products because of its high titer. Its granular form makes it ideal for powdered products. Excellent for the preparation of hand cleaners, paste cleaners, polishes, lubricants and coatings.

ORVUS

WA PASTE. A neutral synthetic detergent and wetting agent whose active ingredient is mainly sodium alkyl sulphate. Excellent sudsing, wetting, dispersing and penetrating properties. Ideal for paste and liquid shampoos, bubble baths, liquid detergents, liquid car washes, liquid floor cleaners, insecticides, glass cleaners, rug and upholstery cleaners.

SEVEN SIGNPOSTS

to successful formulation from Procter & Gamble

ORVUS

ES PASTE. A specially developed synthetic detergent whose active ingredient is mainly modified alkyl sulphate. Offers exceptional efficiency and stability over a wide range of operating conditions. Wetting, penetrating, sudsing, dispersing and emulsifying properties make it excellent for the preparation of liquid shampoos, bubble baths, liquid detergents, liquid floor cleaners, insecticides, car washes, emulsion cleaners.

IVORY Beads

IVORY BEADS
A medium titer, neutral white soap of exceptional purity and quality. Well suited for compounding products where a mild but effective soap is required—hand soaps, polishes, protective creams, dishwashing compounds and paper coatings.

ORVUS

AB GRANULES
A neutral synthetic detergent, wetting and emulsifying agent of the 40% active sodium alkyl aryl sulphonate type. A white product that can be used effectively in the blending of bubble baths, car washes, dishwashing compounds, dairy cleaners, insecticides, laundry detergents, rug and upholstery cleaners.

Procter & Gamble's Products Research Department will gladly supply you with information on how you can save time and money when you formulate with Procter & Gamble products. You can also get technical help in connection with their use by writing to:

ORVUS

K LIQUID. A modified, highly concentrated ammonium lauryl sulphate—modified for increased sudsing and mildness. Exceptionally low cloud and pour points. Highly fluid and easy to handle. Ideal for clear liquid shampoos and liquid detergents where high foaming is required.

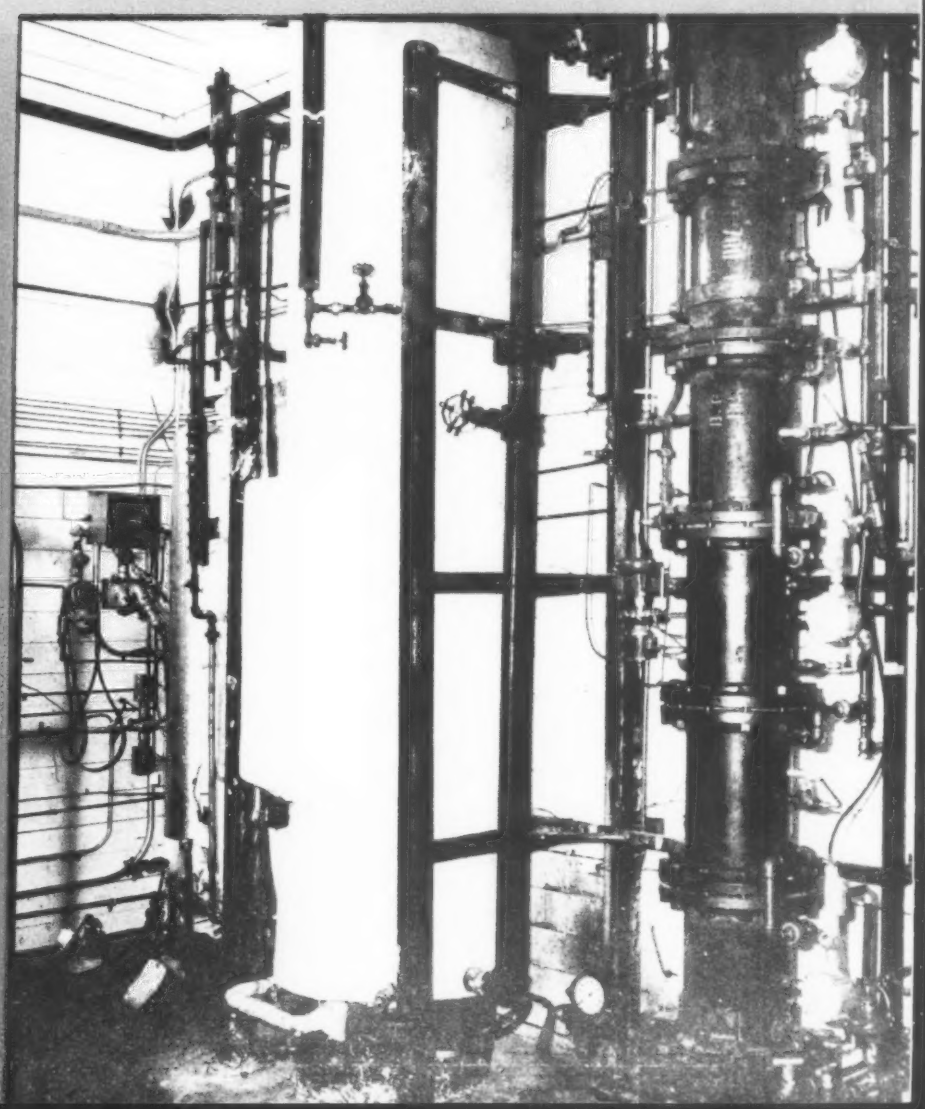
Procter & Gamble

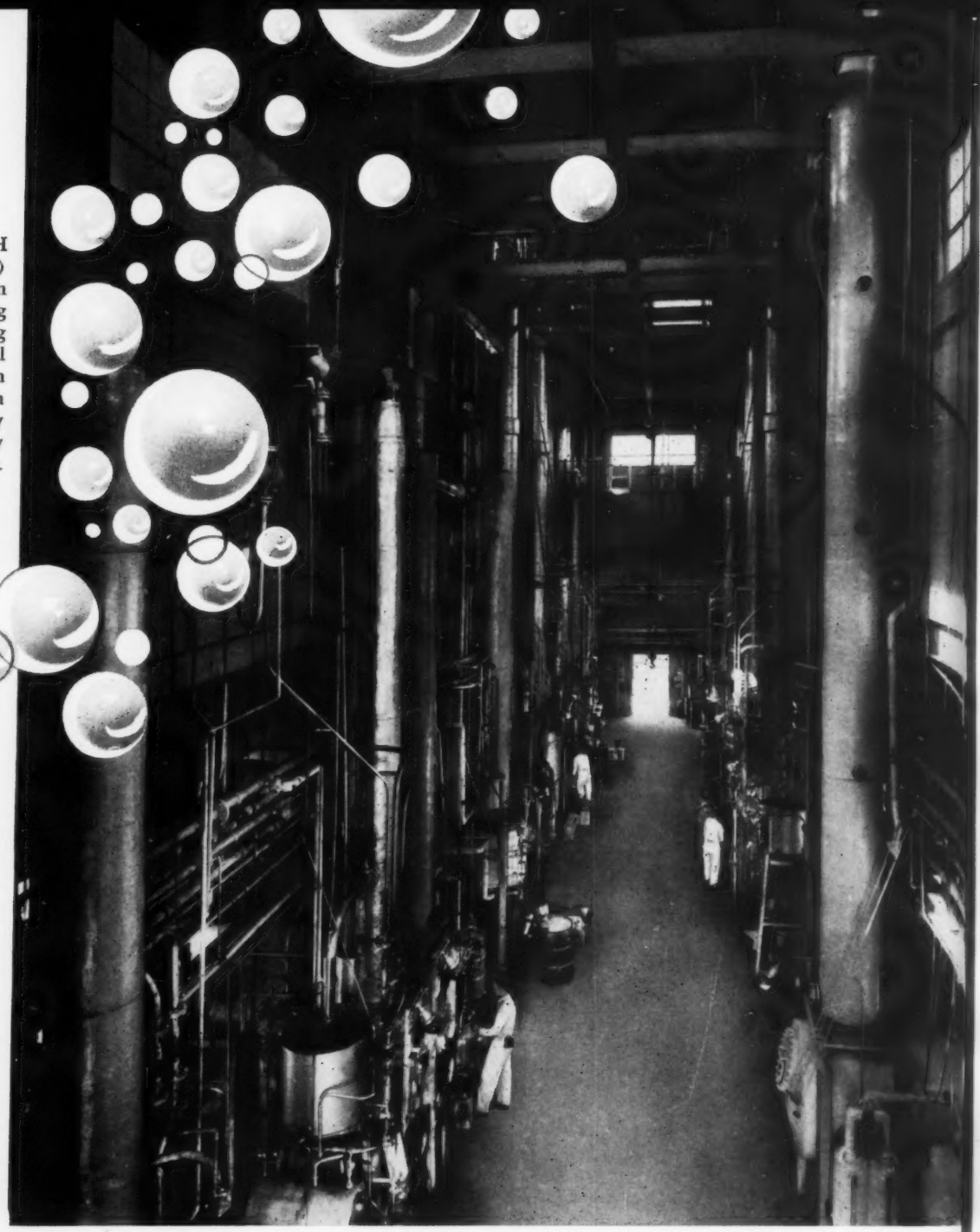
BULK SOAP SALES DEPARTMENT
P. O. BOX 599
CINCINNATI 1, OHIO

Detergents . . . Cleansers . . . Soaps . . .

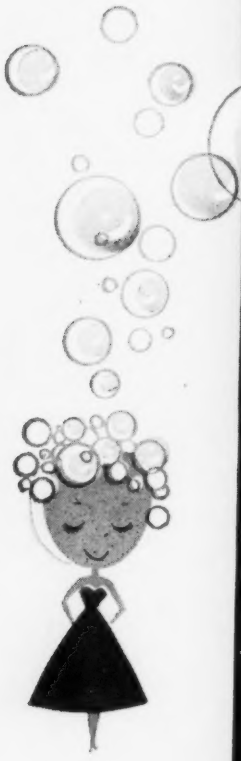
New source of detergent base materials made from ethylene and catalysts may result from novel process utilizing pilot reactor of Continental Oil Co. Unit produces "Alfol" alcohols. For details see article on page 57.

Aerosols
Detergents
Dishwashing compounds
Floor scrubs
Glycerine
Hand cleaners
Laundry soaps
Liquid soaps
Metal cleaners
Potash soaps
Scouring cleansers
Shampoos
Shave products
Soap powders
Starch
Steam cleaners
Medicinal soaps
Textile detergents
Toiletries
Toilet soaps
and other detergent
and soap products





Distillation building (VAH Union Beach, N. J. plant) showing high column stainless steel fractionating equipment. Among numerous VAH technical developments, are new column packing techniques which have added considerably to the efficiency of many distillation processes.



Finer Fragrance SELLS MORE SOAP

Today's trend to upgrade the quality of perfume used in soaps, directly results in increased sales and greater brand loyalty. van Ameringen-Haebler, Inc. has contributed to the soap-maker's ability to achieve these results by the development, through constant research, of distinctly new and finer aromatics, through the production economies made possible by modern, large-scale processing equipment and up-to-date techniques ... and through the creation of lovelier soap fragrances by its staff of master perfumers.

van Ameringen-Haebler

A DIVISION OF INTERNATIONAL FLAVORS & FRAGRANCES INC.

521 West 57th Street · New York 19, New York

New Petrochemical
Intermediates for Detergents

By George E. Hinds*
Continental Oil Co.
Houston, Tex.

MANY of you are familiar with the work of Dr. Karl Ziegler, internationally prominent scientist of Germany, in the organic aluminum chemistry field. His research in this field is opening up new and practical ways of synthesizing new chemicals and also for improving methods for producing older ones. Perhaps the most important new commercial development so far resulting from this relatively new field of chemistry is the low pressure process for making linear polyethylene plastic. This field of aluminum chemistry, in the opinions of many, opens up virtually unlimited possibilities for important developments in the future.

An example of a new method of producing well known chemicals through the route of aluminum chemistry is a process for manufacturing higher molecular weight straight chain alcohols. This is the process we first announced publicly last September as being under development. We refer to it as the "Alfol" process, and the alcohols will be designated by that name as a trademark. Since the principal raw material is petroleum-derived ethylene, these alcohols are new petrochemicals, and it is their applications in the detergent and allied industries to which most of the following remarks will be directed. Also the process will be described briefly and the economics mentioned.

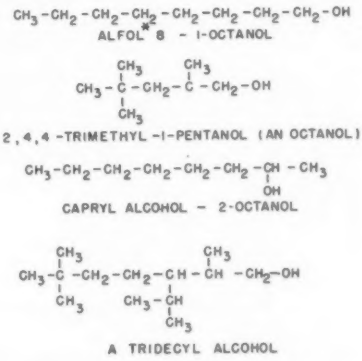
First, a brief description of

*Paper presented during 32nd annual meeting, Association of American Soap & Glycerine Producers, New York, Jan. 22, 1959. Dr. Hinds is director of market development of the petrochemical department of Continental Oil Co.



alcohols in general: Higher molecular weight, straight chain, primary alcohols for many years have been known as fatty alcohols, because of their derivation from fatty acids obtained from a variety of natural animal and vegetable fats and oils. All contain even numbers of carbon atoms as no odd numbered carbon-containing compounds of this type occur in nature.

Figure 1. Examples of chemical structures of fatty and other aliphatic alcohols.



The linear arrangement of the carbon atoms and terminally located functional group in the *fatty* alcohols is illustrated in Figure 1. The first formula shown at the top of the figure is an example of a fatty alcohol derived from a natural oil—in this case coconut oil. This is the C_8—or primary straight chain octanol. Others of this same structure not shown in Figure 1, but also derived from coconut oil, are C_{10} (decyl alcohol), C_{12} (lauryl alcohol) and C_{14} (myristyl alcohol). The cetyl and stearyl alcohols containing 16 and 18 carbon atoms, respectively, are obtained primarily from tallow fats and sperm whale oil.

Examples of alcohols with branched hydrocarbon chain configurations are also illustrated in Figure 1. The OH or functional group is located in the *primary* position (on a terminal carbon atom) as in the case of the fatty alcohols just described, but the difference is in the arrangement of the carbon atoms. This structure is illustrated by the second and last formulas shown in Figure 1. These are not produced from natural fatty acids, but are petrochemicals synthesized from petroleum-derived raw materials.

Another type alcohol shown in Figure 1 is capryl alcohol derived from castor oil. Although the hydrocarbon chain is straight, the OH group is not located terminally, and thus is known as a *secondary* alcohol.

These are only a few examples chosen to illustrate that the name "alcohol" covers a variety of

*Registered trade mark of Continental Oil Co.

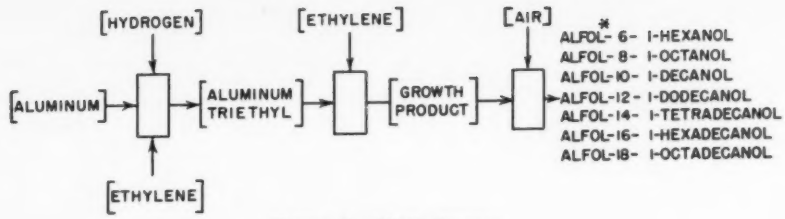


Figure 2. Alfol* Process

*Registered trade mark of Continental Oil Co.

compounds of different chemical structures.

Although the "Alfols" are the same straight chain primary alcohols as the fatty alcohols, now for the first time, they will be synthesized by a commercial process. That is, they will be built up from smaller molecules derived from petroleum.

In appearance, these alcohols are water white liquids up to the C_{12}, and the rest are white waxy solids.

A simple flow diagram of the "Alfol" process is shown in Figure 2. The raw materials are aluminum metal, ethylene and hydrogen which react to form the starting compound—triethyl aluminum. In the next step more ethylene reacts with the triethyl aluminum to form the intermediate consisting of higher molecular weight trialkyl aluminums. Thus the hydrocarbon chains attached to the aluminum are caused to grow in length by addition of the ethylene. These chains now vary in length by multiples of two up through 18 or more carbons. This intermediate, or "growth product" as we call it, is then oxidized. In this reaction an oxygen atom is placed between the aluminum and hydrocarbon chains. Although not shown in Figure 2, we now have a mixture of compounds known as aluminum alkoxides. These are next hydrolyzed to form the mixture of straight chain primary alcohols listed in Figure 2.

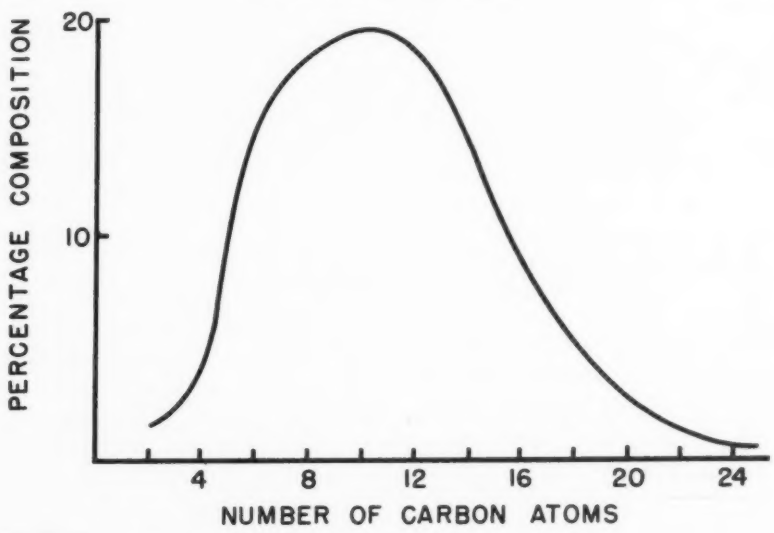
The product mix composition follows a probability distribution curve as illustrated in Figure 3. This shows that not just one or two individual alcohols may be produced by choice. However, the composition may be controlled to an appreciable extent by changing reaction conditions to maximize higher or lower molecular weight alcohols in the mixture of final products—as required to meet market demands. Although this degree of control changes the shape of the distribution curve only slightly, the whole curve can be moved from left to right, or vice versa by proper control of reaction conditions. Work is now in progress to narrow further the range of alcohols that may be produced selectively.

This process has been licensed to Continental under the Ziegler patents and has been developed to the commercial stage by our chemists and engineers, with additional patent rights accruing to us.

How "Alfol" alcohols fit into the detergent industry and certain other uses will be discussed next. In the detergent industry, as well as for industrial uses in which products with good cleaning and/or wetting properties are required, the alcohols of about the C_{10} or C_{12} through C_{18} molecular weight range are converted to certain derivatives. Examples of such derivatives appear in Figure 4.

The first material shown at the top of Figure 4 is sodium lauryl alcohol sulfate. The same compound results if "Alfol 12" is used instead of the coconut oil derived lauryl alcohol. It is an example of anionic type surface active compounds made by sulfation of the alcohols, followed by neutralization to form a metallic, ammonium or amine salt. These alcohol sulfates have excellent surface active properties which vary from the lower to higher molecular weight ends of the series. For example, the C_{12} derivative has good detersive and excellent foaming and wetting properties. Because its calcium and magnesium salts are quite soluble, this C_{12} derivative is unusually stable and effective in hard water. The C_{14} alcohol sulfate in certain tests appears to be superior in detergent action to the C_{12}. Its foam stability and character also are excellent. The C_{16} and C_{18} alcohol sulfates are bet-

Figure 3. Alfol* Distribution



*Registered trade name of Continental Oil Co.

ter detergents for cotton, but are not as good foam producers as the C_{12} and C_{14} alcohol sulfates.

Sodium lauryl ether sulfate is another example of an anionic type active ingredient for detergent formulations. This type material is made from an alcohol and ethylene oxide followed by sulfation and neutralization. Besides the straight chain primary alcohols of the "Alfol" type, similar products are also made from other intermediates, e.g., from the petrochemical branched chain primary alcohols produced in the Oxo process.

The alcohol ether sulfate compounds are exceptionally soluble and are gaining interest as detergents with good foaming properties. Because of their low viscosities in the presence of inorganic salts, they are finding application in liquid detergent formulations.

Sodium dodecylbenzene sulfonate, the formula for which is shown in Figure 4, is the most widely used petrochemical-derived anionic surface active compound. It is not an alcohol derivative and is mentioned here only as another kind of synthetic detergent made from petrochemicals.

Lauryl trimethyl ammonium chloride, shown in Figure 4, is an example of the cationic class. The cationics—also called quaternary ammonium compounds—will kill many types of bacteria. They are therefore used in many sanitizer formulations — even in oil wells to kill certain bacteria which cause plugging of the formation and corrosion of equipment.

	ALFOL* 1218		ALFOL* 1214		ALFOL* 1618	
1- DODECANOL	51	24	64	47	—	—
1- TETRADECANOL	29	27	36	53	—	—
1- HEXADECANOL	14	27	—	—	70	54
1- OCTADECANOL	6	22	—	—	30	46

* TRADE MARK

Figure 5. Alfol* 12-18—Typical production mixtures
(Percentage composition)

Still another class of surface active materials is illustrated by the ethoxylated lauryl alcohol shown in Figure 4. This is representative of the nonionic type surface active materials.

These nonionic compounds can be made from alcohols of the "Alfol" type as well as from such other materials as the branched chain or Oxo type alcohols.

The nonionics are particularly good emulsifiers for oil and water. The water soluble (oxygen containing) end of the molecule can be sized relative to the oil soluble end to yield a wide variety of products with different properties. Nonionics are used in household products and in many industrial applications—for example—wetting agents, textile processing chemicals, raw wool scouring, demulsifiers for crude oil and many others. Many are compatible with either anionics or cationics and can be used in formulations including one or the other of those types.

In addition to the detergent and allied industries, the other members of the alcohol family are used in volumes of many millions of pounds per year in the manufacture of plasticizers mainly for polyvinyl plastics. These are principally the C_8 – octyl – and C_{10}– decyl alcohols–of both the straight and branched chain types. Other uses include intermediates for the manufacture of lubricating oil additives and synthesis of a number of organic chemicals.

Referring once again to the "Alfols," as previously stated, it is possible by proper control of reaction conditions directly to produce and separate mixtures of different compositions. The approximate range within which mixtures in the C_{12}-C_{18} series may be directly produced is illustrated in Figure 5. Production specifications may be set to yield different specific mixtures, the compositions of which may be controlled to within narrow limits. Although it is possible to achieve similar compositions from blends of natural derivatives, it is less convenient since neither coconut oil nor tallow produces much C_{14}.

I do not wish to imply that the range of compositions shown in Figure 5 are by any means the only ones in which the "Alfols" may be supplied. Mixtures of these general

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Figure 4. Detergent types

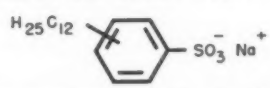
ANIONIC

$CH_3-CH_2-CH_2-CH_2-CH_2-CH_2-CH_2-CH_2-CH_2-CH_2-CH_2-CH_2-O-SO_3^- \ Na^+$

SODIUM LAURYL ALCOHOL SULFATE

$CH_3-CH_2-(CH_2-CH_2)_4-CH_2-CH_2-O-CH_2-CH_2-(O-CH_2-CH_2)_2-O-SO_3^- \ Na^+$

SODIUM LAURYL ETHER SULFATE



SODIUM DODECYLBENZENE SULFONATE

CATIONIC

$CH_3-CH_2-CH_2-CH_2-CH_2-CH_2-CH_2-CH_2-CH_2-CH_2-CH_2-CH_2-\overset{CH_3}{\underset{CH_3}{\overset{|}{\underset{|}{N}}}}-CH_3 \ Cl^-$

LAURYL TRIMETHYL AMMONIUM CHLORIDE

NONIONIC

$CH_3-CH_2-(CH_2-CH_2)_4-CH_2-CH_2-O-CH_2-CH_2-(O-CH_2-CH_2)_6-O-CH_2-CH_2-OH$

ETHOXYLATED LAURYL ALCOHOL

Detergents in Water and Sewage

By H. V. Moss*,
Monsanto Chemical Co.
St. Louis

THIS is the fourth annual report (1,2,3) on the research program which was begun several years ago by the Association of American Soap & Glycerine Producers to develop factual information related to purported effects of household detergents in sewage treatment and water supplies.

The organization of the research program is much the same as that reported last year, with some of the studies under way being carried on internally by technical committees, but with the bulk of the investigations being done externally through grants to universities and private research organizations. Some minor rearrangement of internal committee responsibilities has been made to permit a coordinated approach to the problems at hand. These changes will be discussed later.

Basically this research program encompasses investigations on both of the major ingredients of household detergents: the surface active agent and the sodium polyphosphate builders. Since alkylbenzene sulfonate (ABS) derived from polypropylene represents perhaps as much as 70% of all surface active agents used in household detergents, these investigations have continued to be limited to ABS, as the surface active agent, and to sodium tripolyphosphate and tetrasodium pyrophosphate as the builders.

Expenditures for the research contracts authorized to date and through July 1959 amount to $251,000. This is represented by expenditures through 1958 of $203,000 and $48,000 already authorized to be expended through July 1959.

As before, expenditures associated with internal sub-committee activities on development of analytical methods, field surveys and the like, are not included in the Technical Advisory Committee budget; these represent additional contributions absorbed by the various cooperating companies.

During 1958 the Soap Association sponsored seven outside research projects. Two were brought to a successful conclusion, and good progress was made on the others. Publication of much of the data is proceeding and should appear in 1959.

The first major presentation of the results of AASGP-sponsored research was made in a symposium on October 7 during the convention of the Federation of Sewage and Industrial Wastes Association in Detroit. In this symposium, arranged by Professor P. H. McGauhey of the University of California, papers were presented by Professor McGauhey on his studies at California on the fate of ABS in sewage treatment; Professor Rohlich and Dr. Polkowski reported on their studies at the University of Wisconsin on frothing in sewage treatment; Dr. Ross McKinney of Massachusetts Institute of Technology described his investigations on the biochemistry of ABS metabolism; Professor R. S. Engelbrecht and James J. Morgan described their work on the occurrence and degradation of condensed phosphates in Illinois surface waters carried on at the University of Illinois; and Professor C. E. Renn of Johns Hopkins University described work in progress on the adsorption of ABS by a variety of dispersed materials.

These authoritative presentations, all reporting Soap Association-sponsored research, were well received. The full papers should appear in *Sewage and Industrial Wastes* early in 1959.

In addition to this symposium, research sponsored by AASGP has been reported on in review papers by F. J. Coughlin of Procter and Gamble before the American Oil Chemists Society in June (4) and Dr. J. D. Justice of Lever Brothers Co. reviewed Soap Association research in a paper presented to the Canadian Institute on Sewage and Sanitation in Quebec in October. (5)

Analytical Methods

Publication of an analytical method for quantitative differentiation of phosphates in water, as developed by the Sub-Committee on Phosphates of AASGP, appeared in the *Journal of the American Water Works* Association in December. (6) Development of this refined analytical procedure is the result of over two years cooperative effort by 13 industry representatives. This new method represents a significant contribution to water analysis and is being considered for inclusion in the eleventh edition of "Standard Methods for the Examination of Water, Sewage and Industrial Wastes," one of the basic analytical handbooks for water and sewage treatment plant operators.

The Sub-Committee on Analysis of ABS continues active in efforts to simplify the infrared

*Paper presented during 32nd annual meeting, Association of American Soap & Glycerine Producers, New York, Jan. 21, 1959. Mr. Moss is chairman, Research Steering Committee, of the Soap Association.

Treatment

Review of 1958 research investigations, sponsored by the Soap Association, to develop facts related to purported effects of household detergents in sewage treatment and water supplies in the U. S.

method previously developed and published (7) through the cooperative work of this group. The continuing objective is to streamline the procedure for analysis of sewage wherein ABS is ordinarily present in higher concentrations (1-10 ppm) than normally found in surface waters (0.00-0.2 ppm). This modified procedure is being perfected by the sub-committee under the direction of Dr. Ralph House of California Research Corp. and in the near future will be subjected to collaborative testing in the laboratories of the cooperating companies to prove it out.

The search for an alternative quick, simple and reliable method for analyzing water or sewage for alkylbenzene sulfonate also continues with promise of success. Such a technique is still needed since existing relatively simple colorimetric procedures in general use are inaccurate. (7) (8) Toward this end, a fellowship was placed at the University of Southern California in 1957 under the direction of Professor O. H. Miller. In the first year of this project a large number of dye-solvent combinations were tested for extraction of ABS selectively from aqueous solution in the presence of interfering substances such as soap, urine, blood and bile salts. Six dyes have been found satisfactory with chlorobenzene as the preferred solvent. Preliminary results on the second phase of this project provide evidence that greater selectivity will be possible with this technique and interferences from substances already mentioned which affect the results in existing colorimetric methods should be eliminated. If the work proceeds as the present results indicate, the development of this analytical tool will greatly assist in further defining many of the problems in sewage and water treatment which have been attributed to detergents. This study is presently scheduled for completion in June 1959.

Liaison has been maintained with other technical groups on this analytical problem. The Research Steering Committe has been working closely with the Analytical Task Group of the American Water Works Association. Their recently published report (9) points out the existing analytical problems and cites the contribution the Soap and Glycerine Association has made through the development of the infrared "referee method,"

Water and Water Treatment

The project established at the Univesrity of Illinois in 1955 originally under Professor J. C. Dietz and subsequently under Professor R. S. Engelbrecht to investigate factors which could be associated with the phosphate component of detergents entering water supplies, has been completed. A partial report on this work was given by Dietz in May 1957 at the Purdue Conference on Industrial Wastes (10) and, as previously mentioned, other aspects of these investigations were presented by Engelbrecht and Morgan at the October meeting of the Federation of Sewage and Industrial Wastes Association. Additional presentations of material of more direct interest to members of the American Water Works Association are in preparation.

In review of previous reports (2) (3) it may be recalled that the University of Illinois project was designed to establish the amount and variety of phosphates in typical surface streams; to determine whether complex inorganic phosphates used in detergents persist as such in their passage from domestic waste water to a water treating plant and lastly, whether in concentrations of complex inorganic phosphates normally found in raw water supplies, complications can arise in conventional water treatment.

In the first phase of the work, three stream surveys were made on Illinois waters. The first survey concentrated on the sampling of lakes and reservoirs, the second on a number of streams throughout Illinois, and the third survey, which was continued for an eight-month period was a detailed history of phosphate concentrations at seven locations on the Kaskaskia River. Results of this survey are reassuring in that more than half of the phosphate found in streams was present as simple orthophosphate; the balance of the phosphate was made up of both inorganic and organic polyphosphates. The phosphate concentrations found in Illinois surface water supplies were low, with condensed phosphate concentrations generally less than 0.5 mg/l and orthophosphate plus condensed phosphate generally less than 1.0 mg/l. The Kaskaskia River, with a total drainage area of 5,220 square miles, showed a mean condensed phosphate concentration of 0.20 mg/l. Condensed phosphate was found to be less than 0.50 mg/l in 90 per cent of the samples tested.

A significant finding in this

investigation is that approximately 45 per cent of the phosphates in streams comes from the drainage of agricultural land. In the Kaskaskia River studies the over-all mean land drainage phosphate was found to be 1.40 pounds per day per square mile of cultivated drainage.

It was verified in this work that condensed phosphates, as represented by sodium tripolyphosphate and tetrasodium pyrophosphate, are subject to hydrolytic degradation and that degradation rate varies in natural waters having different chemical, physical and biological characteristics. Biological life appears to increase the rate of polyphosphate degradation since samples of unfiltered surface water consistently showed faster rates of phosphate degradation than did filtered waters.

Laboratory jar tests and studies in a pilot coagulation unit constructed in connection with the project showed that although condensed phosphates at levels of 0.5 ppm P_2O_5 and greater do exert perceptible interference with normal coagulation and sedimentation, such interference can be overcome by simple and practical modifications in water treatment practices. Modifications found effective included moderate increase in coagulant dosages or an increase in the settling time.

These results conclusively show that the levels of phosphate found in Illinois waters are not significant from a practical point of view. Furthermore, of the small amount of phosphate found in surface waters only a portion can be attributed to phosphates originating from household detergents.

Also in the area of water and its purification, a project was established at Johns Hopkins University under the direction of Professor Charles E. Renn to develop effective and economical means of removing traces of alkylbenzene sulfonate (ABS) from municipal water supplies should this ever prove necessary or desirable. When ABS does occur in surface waters, it is normally at very low concentrations. In special cases, such as during periods of drought which cause low raw water supplies, there have been rare instances of bothersome ABS concentrations. However, when synthetic detergents rise to levels of several parts per million, it is due to a general increase in contamination by sewage and this situation therefore poses the more serious problem of gross pollution of the water source. In these cases ABS is rather a blessing in disguise in being more of an indication of other problems than it is a problem in itself.

Studies by Professor Renn have been directed to evaluating ABS adsorbing capacities of a variety of finely divided substances which might serve to remove ABS during conventional clarification of water, or serve as packing in columns through which water could be passed for extraction of ABS in solution.

Adsorbing materials that have been tested include garden soils, river silts, talc, china clay, diatomite, silica gel and calcium carbonate—generally in the class of hydrophilic materials, and oil emulsions, powdered paraffin and activated carbons, in the class of hydrophobic substances.

The hydrophobic materials generally were more effective in removing ABS from solution and in this class, activated carbons were the best. A significant difference in ability to adsorb ABS was found in different varieties of activated carbon.

In ABS concentrations in the range of 0.2 to 2.0 ppm, from 40 to 95 ppm of carbon were required to remove 90 per cent of the ABS. As ABS concentration declined, larger amounts of carbon were required to depress further ABS in solution. The unit efficiency of activated carbon in removing ABS rises as concentration of ABS in solution increases. One of the activated carbons found effective in this work is a variety presently employed at many treating plants for correcting odor and color in municipal water supplies.

Of considerable interest is a more recently demonstrated technique involving use of activated carbon combined with fine-bubble aeration whereby economies in carbon usage for adsorption of ABS appear feasible.

This work continues, with completion scheduled for mid-1959. As mentioned earlier, Professor Renn presented some of his results in a paper at the Federation of Sewage and Industrial Wastes convention in October, and this paper is now in press.

Sewage Treatment

The third basic field of study has been that of sewage treatment and of the effect of ABS in sewage on the operation of municipal treatment plants. Much attention has been given to this area. Earlier reports (1,2,3) have described work on the fundamental biochemistry of the bacterial degradation of ABS in a project placed at Massachusetts Institute of Technology under the direction of Professor Ross E. McKinney, which was completed early in 1958. Since this project has already been reviewed in considerable detail on several occasions, suffice to say at this time that contrary to previous widespread beliefs, the work at MIT has demonstrated that a large part of ABS in raw sewage is degraded through biological oxidation during conventional activated sludge sewage treatment.

More recent efforts at MIT have been directed toward inducing maximum ABS oxidation. Experimentation in laboratory activated sludge units coupled with experience on related problems indicated that maximum ABS degradation could be accomplished in a high-solids complete-mixing activated sludge system designated as the "Hi-Lo" process. Using this system on a laboratory scale, reductions as high as 76 per cent of the ABS were realized. Professor McKinney reported on the biochemi

cal phases of his work at the Federation of Sewage and Industrial Wastes convention in October, and publication of this and other phases of his work is expected early in 1959.

Based on the promising laboratory results with the "Hi-Lo" complete-mixing activated sludge technique, a full scale study was initiated through Rolf Eliassen Associates, with whom Professor McKinney is associated. Cranston, R. I., has an activated sludge plant which consists essentially of two separate units. One of these units was converted to the Hi-Lo process, while the other will serve as a control. This modified unit went on stream early in December and initial operation has shown a qualitative favorable difference in foaming and in characteristics of the effluent. This could prove to be a real "break-through" in establishing means of attaining maximum degradation of ABS and in minimizing frothing during sewage treatment. The required modifications to the Cranston plant were nominal in cost and engineering estimates show that this type of system should be cheaper to construct than present conventional sewage treatment plants.

At the time the work at MIT was initiated, a project was also established at the University of California at Berkeley under the direction of Professors P. H. McGauhey and E. S. Crosby to determine what happens to ABS in sewage treatment. Both conventional and modified sewage treatment systems were studied on a laboratory scale using ABS tagged with radioactive sulfur to eliminate chemical analytical ambiguities.

Through sedimentation studies it was established that only small amounts, two to four per cent, of ABS are removed by settled sludge, although experimentally from 10 to 12 per cent of the ABS can be removed through isolation of suspended solids by filtration.

It is significant that independent of the work at MIT that has been mentioned, it was also found at the University of California that removal of 50 per cent of influent ABS can be effected in conventional activated sludge sewage treatment. Further, that higher amounts of ABS are removed by maintaining suspended solids concentrations in the range of 5000 to 6000 mg/l where the bacteriological population preferably is in active state of growth. Initial removals up to 70 per cent of ABS were demonstrated, although not maintained in the small scale equipment employed.

In the University of California work, as well as at MIT, there was no evidence that existing concentrations of ABS in sewage (5-10 ppm) have detrimental effects on sewage treatment processes; bacterial growth and BOD reduction were normal in the presence of levels of ABS that presently exist or in the foreseeable future could exist. In this connection, the work at MIT gave indications that ABS stimulates utilization of other organic material by some organisms in sewage.

Alternative methods of removing ABS from sewage have been and are continuing to be investigated at the University of California. These include experiments on high rate trickling filters whereby, as indicated by work on percolating filters in England (11), still higher levels of ABS destruction may be attained.

Of considerably more interest is continuous removal of ABS by induced frothing and surface skimming of the resulting foam. This takes advantage of the known tendency for surface active agents to concentrate in the froth, as has been demonstrated experimentally where the foam from a solution having 10 ppm ABS contained 3800 ppm of ABS. Removal of more than 80 per cent of the ABS in influent containing 10 ppm ABS has been realized by this approach. Addition of traces of foam inducing substances have shown higher ABS removal. Further investigation of this technique is continuing, including study of optimum aeration and best means for disposing of the foam. One specific approach under investigation is destruction of the foam by flaming with waste digester gas.

The most prevalent allegations about detergents in sewage

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About the author . . .

HENRY V. Moss, chairman of the Soap Association's Technical Advisory Committee, is director of product quality for the inorganic chemicals division of Monsanto Chemical Co., St. Louis. With Monsanto since 1926, he was associated with the former phosphate division's research program since 1935 when he was named chief chemist of Monsanto's Carndelet, Mo., plant. In 1945 he was appointed research supervisor at the company's laboratory in Anniston, Ala., and in January, 1950, was named assistant director of research for the inorganic chemicals division. In August of that year he was appointed director of research, a post he held until 1952 when he assumed his present position.

Design Guide for

Better Detergents for Cotton

IN the recent transition from soaps to synthetic detergents many chemical types of surfactants became available commercially, but only a select few have found their way into the home laundry market, the major outlet for the detergent industry. There are three reasons why these few types have dominated the industry:

1. They meet required performance standards.
2. They can be manufactured commercially in large volume.
3. Their cost is stabilized at a relatively low level.

This is past history. In the future a few select types still will be favored in the large volume market, probably for the same three reasons. But it seems certain detergents of the future will have improved performance properties compared with today's materials, thanks to our expanding background of technical information.

In designing a more effective cotton detergent, knowledge of the roles played by surfactants and builders in the cleaning process is an invaluable assistant. Familiarity with the physico-chemical principles involved in detergency is also helpful. Based on an analysis of these important roles and principles, the following requirements of a cotton detergent for achieving maximum cleaning effectiveness are proposed.

Wetting Power

The first requirement of an idealized cotton detergent is related to surface active properties such as wetting and emulsifying ability. Due to the presence of oily or waxy materials in most soils and on cotton fabric their surfaces tend to be hydrophobic in character. As a result, the interfacial tension is high between these solid surfaces and water. Pure water fails to wet the surfaces readliy.

An important function of surfactants is to lower interfacial tension so that the solution can wet the surfaces and penetrate to the areas of the soil-fabric interfaces. Thus, wetting is important because it brings the detergent solution into close contact with soil and fabric.

Good cotton detergents contain surfactants which are at least moderately effective wetting agents. However, surfactants which are the best wetting agents are not superior in detergency. For this reason it is difficult to evaluate the importance of wetting in the cleaning process, although it is apparent that at least a moderate degree of wetting activity is necessary. Therefore, the first requirement of a cotton detergent for achieving maximum effectiveness is that it contain a surfactant having at least

*Paper presented at 32nd annual convention of Association of American Soap and Glycerine Producers, New York, Jan. 22, 1959.

Figure 1

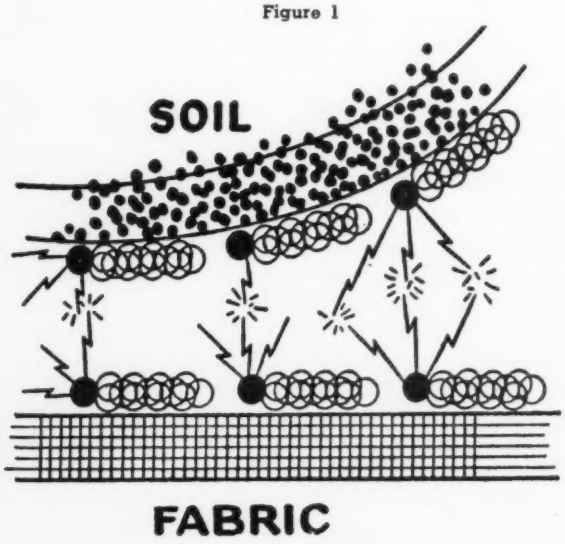
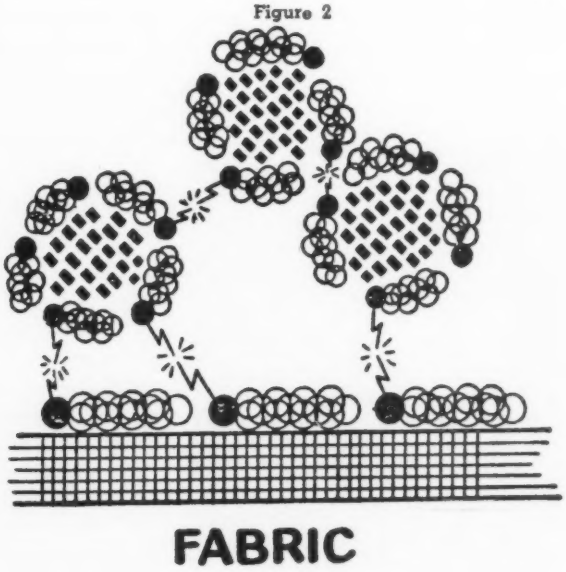


Figure 2



By R. D. Stayner*
(Oronite Chemical Co.)
San Francisco



a moderate degree of wetting activity.

Hydrocarbon Chain Length

Several other important functions of surfactants in detergency are a result of their tendency to adsorb on soil and fabric surfaces. The hydrocarbon chain of surfactants becomes adsorbed preferentially on hydrophobic surfaces. By virtue of its polar group, the surfactant converts soil surfaces from hydrophobic to hydrophilic in character. This creates a new surface on the soil which is far more compatible with a water phase. Soil is now more easily removed from the fabric, broken up, dispersed and emulsified in the wash solution.

Although it is the polar group of the surfactant which makes the soil surface hydrophilic, performance is governed by the tendency of the surfactant hydrocarbon chain to adsorb on the soil surface. Thus, high efficiency correlates with a strong hydrophobic character of the hydrocarbon chain. The larger the hydrocarbon chain of the surfactant, the stronger the hydrophobic character. This suggests that, for maximum cleaning effectiveness, a surfactant should have as large a hydrocarbon chain as possible being limited in size only by the range of hydrophobic/hydrophilic balance required for a moderate degree of wetting and emulsifying ability. This is the second requirement of a superior cotton detergent.

Zeta Potential

An important function of anionic surfactants in detergency is their ability to alter electrical effects. This property also depends on adsorption of a surfactant on soil and fabric surfaces. Its effect on detergency results from the fact that, "surfaces bearing the same electrical charge repel each other".

An electrical surface charge on finely divided soil is the result of either: (a) ionization of surface components, or (b) the tendency of surfaces to preferentially adsorb ions from the medium. For example, ionization of fatty acids present in some soils results in a negatively charged carboxyl ion and a positively charged hydrogen ion. Being part of the fatty acid molecule, the carboxyl ion is firmly attached to the surface. However, the hydrogen ion tends to wander away from the immediate area of the carboxyl ion. As a consequence, there is a difference in electrical potential between the immovable layer of carboxyl ions attached to the surface and the movable hydrogen ions in the body of the liquid medium. This results in a negatively charged surface. Therefore, any other negatively charged surface in the immediate vicinity would tend to be repelled. This electro-negative surface charge is called the zeta potential. It is believed to be a very important factor in cleaning.

Most fabrics and finely divided soils are electro-negatively charged or have a negative zeta potential. Therefore, their surfaces tend to repel each other. When soils stick to fabric it is because these electrical repelling forces are too weak to overcome other forces which stabilize the soil-fabric bond. A major role of anionic surfactants in the soil removal process is to adsorb on soil and fabric surfaces and increase the negative zeta potential, strengthening the forces of repulsion between the surfaces. This is illustrated in Figure 1. Surfactants are shown adsorbed on the surfaces of soil and fabric. The polar groups are ionized and their counter ions, such as sodium ions, have wandered away far enough so that the soil and fabric surfaces bear strong electrical charges. Thus, by increasing the negative zeta potential with a surfactant, increased

(*Turn to Page* 264)

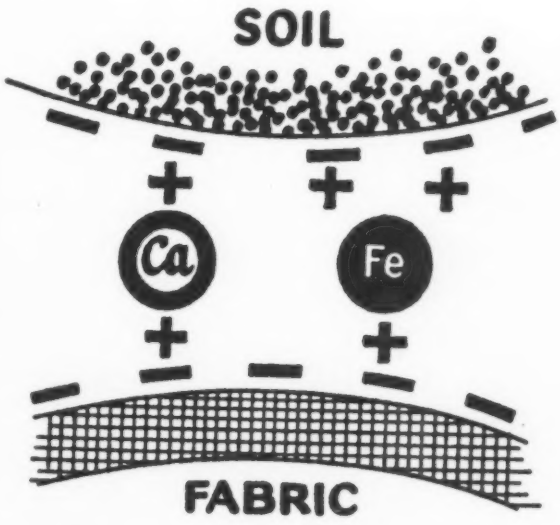


Figure 3

Methods for

Analysis of Fluorescent Brighteners

By Lloyd E. Weeks, Jay C. Harris and John T. Lewis*
Monsanto Chemical Co.

FLUORESCENT brighteners are a very minor but important component of most detergent compositions. They are used not only to brighten washed fabrics but also to whiten soap and detergent products. If it is assumed that the 3.5 billion pounds of detergents sold annually contain an average concentration of 0.05 per cent brightener, then the yearly volume of brighteners might total two million pounds. Prices of brighteners range from about one dollar to over ten dollars per pound, depending on their active content and functional properties. Owing to their high cost, it is important for the purchaser to know something about the quality of material being supplied. Is each lot up to specification with regard to active content? Does the material meet particle size, color, solubility, volatile content, and other requirements? Here, we will be mainly concerned with methods for determining the relative purity of brighteners and how they might be characterized generally in detergent compositions. Since the absolute purity of brighteners is often difficult to determine, the term relative purity will be used to describe brightener quality. Relative purity is defined as the activity of a brightener sample compared with that of a reference sample of the same type.

Brighteners function by absorbing ultraviolet light present not only in sunlight but also in light from fluorescent and incandescent lamps, and then convert this invisible portion of the spectrum to visible light. An excellent illustration of this process has been presented by Glarum (1). The activity for a given brightener will depend not only on the character of its active ingredient but also on its concentration. The higher its concentration, the more ultraviolet light absorbed and the more the brightening effect. This occurs regardless of whether the brightener is on washed fabric or in solution. Once the brightener has demonstrated acceptable functional properties, its relative purity may be analyzed spectrophotometrically for quality control.

Spectrophotometric Analysis

Method

Equipment and Materials:

Brighteners A, B, and C—Commercial products.
Volumetric flasks, actinic grade—250 and 1000 ml.
Pipettes—1, 5, 10 and 25 ml.
Erlenmeyer flask, aluminum foil wrapped—500 ml.
Analytical balance.
Cary recording spectrophotometer, Model 14M, with one centimeter cells.
Solvents—Absolute methanol, distilled water.
Sodium hydroxide—40% aqueous.

Procedure

Preparation of Sample:

A 0.2500 g. sample of brightener was transferred to a foil wrapped 500 ml. Erlenmeyer flask by washing the weighing pan with 200 mls. of absolute methanol. One milliliter of 40 per cent aqueous sodium hydroxide was added to aid dissolution. Then, the mixture was heated at 55-60°C. for several minutes. It was important that all ultraviolet light be excluded from brightener solutions in non-anionic glassware, otherwise most brightener solutions are rapidly degraded. Next, the methanol solution was transferred to a 1000 ml. actinic volumetric flask. The 500 ml. Erlenmeyer flask was rinsed with 200 mls. of water and then 200 mls. of methanol.

After transferring these rinsings to the 1000 ml. actinic flask, the flask contents were diluted to the mark with 67 per cent aqueous methanol. The resulting solution was clear and had a concentration of 0.0250 per cent brightener, "as received." This was marked "brightener stock solution" and stored in the dark.

Test solutions were prepared by diluting 5, 10, 15, 20, and 25 ml. aliquots of the stock solution with 67% aqueous methanol to the mark in 250 ml. actinic volumetric flasks. The corresponding brightener concentrations were: 0.0005, 0.0010, 0.0015, 0.0020, and 0.0025%.

Absorbancy Measurements:

The Cary spectrophotometer was calibrated to zero absorbancy over the range of 300 to 400 mμ with 67% aqueous methanol in both the blank and test cells. It was operated at one half millimicron per second. The ultraviolet absorption spectra were determined for the brightener test solutions at 0.0010% concentration. Their absorbancy-wave length curves are illustrated in Figure 1. Once the absorbancy characteristics of a

*Paper presented during 45th annual meeting, Chemical Specialties Manufacturers Assn., New York, Dec. 8, 1958.

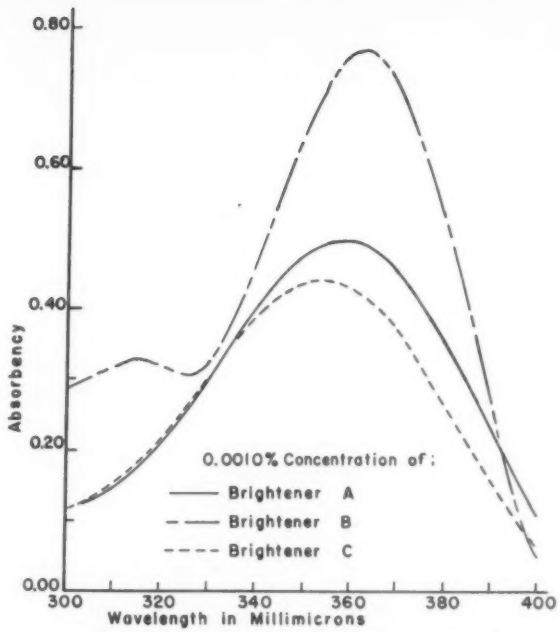


Figure 1. Ultraviolet absorption spectra

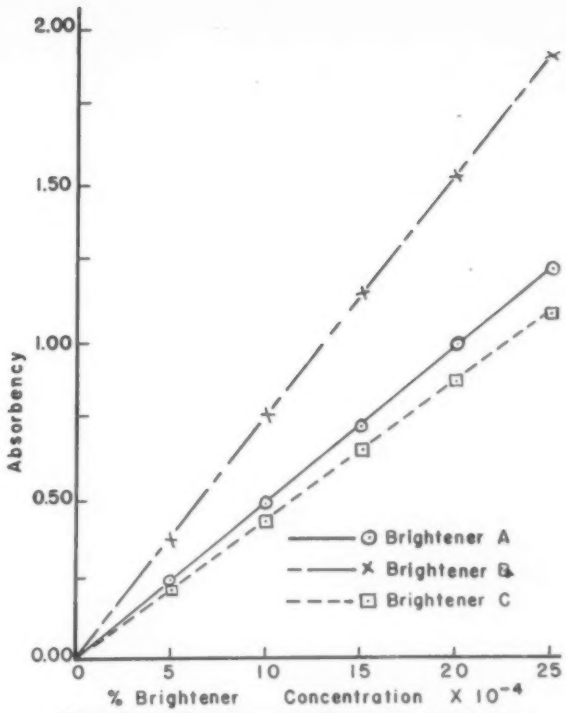


Figure 2. Brightener concentration vs. absorbancy

brightener were known, then the other solution concentrations were analyzed at the wave length providing maximum absorbency. Brightener concentration vs. maximum absorbency curves are illustrated in Figure 2. After a concentration vs. maximum absorbency curve is made for a standard of reference brightener, it is then possible to analyze other samples of the same type for relative purity.

Discussion

The ultraviolet absorption spectra in Figure 1 show that Brightener B has highest absorbancy, while A and C are somewhat lower. Maximum absorbancy occurs at 355 to 365 mμ.

The data of Figure 2 show that ultraviolet absorbancy by the brightener solutions is linear with concentration and, therefore, follows Beers' law. Absorbancy values may be divided by brightener solution concentration to give absorbancy indices. For example, the absorbancy index of Brightener A is 500, of B—763, and of C—440. These values make possible comparison of samples independent of concentration and to a great extent independent of the instrument used. These measurements serve only to aid in determining the relative purity of a characterized brightener and are not to be confused with brightener functional properties.

A statistical study was made of the precision of analysis of relative brightener purity by ultraviolet absorption. Here, a four factor analysis of variance at two levels was conducted for determining the effects of sample, operator, time, replication, and their interactions. Absorbancy values obtained were converted to percentages of a standard brightener by means of a concentration vs. absorbancy calibration curve similar to those in Figure 2. It was found that the relative brightener purity could be analyzed with a precision of ± 2 per cent of the amount found at 99 per cent confidence level (99 times out of 100). This precision based on comparing two samples replicated twice is well within the precision of ultraviolet absorption spectroscopy.

Chemical analysis of brighteners further aids in their characterization. Components of general interest are volatile at 105°C., ethanol insoluble to detect for example sodium sulfate, sodium chloride by potentiometric titration (2), and organic sulfur by cationic titration (3). (Some brighteners contain sulfate or sulfonate groups which will react with cationic surface active agents.) Examples of these data are listed in Table I.

It is important for quality control purposes to know whether the right amount of brightener has been added to the detergent. Lack

Table I. Brightener Compositions

Brightener	% Volatile at 105°C.	%Ethanol Insoluble	%NaCl	%Organic Sulfur by Epton
A	5.8	15.7	1.5	0.00
B	5.2	3.6	1.4	4.56
C	9.3	11.6	3.4	0.00

of control could result in inferior brightener functional properties or in higher than anticipated brightener costs. Ideally, the relative brightener concentration should be determined by direct absorbancy measurements on detergent solutions. In many cases, however, detergent solutions may be turbid or contain additional ultraviolet absorbers that interfere with this analysis. Isolation of brighteners from detergents is a very tedious, if not impractical, process. Analysis by direct fluorescence measurements on the detergent composition is also difficult, since slight variations in detergent moisture content, as well as brightener concentration, will influence fluorescence. This leaves the relative quantity of brightener in the detergent to be determined by its functional property. This was done by washing fabrics in solutions of a built detergent containing four levels of the same brightener. After four and 10 washes in a "Terg-O-Tometer," the fabrics were evaluated. Fabric fluorescence was measured by a fluorimeter (4) and fabric whiteness was rated by visual evaluation.

Control of Brightener in Detergent Method

Equipment and Materials:

Terg-O-Tometer set to operate at 75 cycles per minute through 350° rotation at 120°F.

Terg-O-Tometer tub covers—slotted stainless steel discs supported in the tub just below the detergent solution surface.

Gra Lab interval timer.

Stainless steel beakers—two liter capacity.

Aluminum covers for the S. S. beakers, having holes for stirrers.

Load. Nine swatches of desized unfinished white cotton Indianhead — 6½ × 6½ inches each were trimmed to a total weight of 40.0 g.

Three swatches of spun nylon No. 351 (Testfabrics) 6½ × 6½ inches each were trimmed to a total weight of 10.0 g.

Water — 300 ppm. hardness (60% Ca/40% Mg. as $CaCO_3$. A 2000 ppm. hardness stock solution was prepared by diluting solutions of 26.4 g. $CaCl_2 \cdot 2H_2O$ and 29.6 g. $MgSO_4 \cdot 7H_2O$ to 15 liters. This stock solution was further diluted to 300 ppm. hardness just prior to use).

Hand-operated wringer.

Bock extractor.

General Electric flatplate ironer.

Bowser humidity cabinet set at 70°F. and 60% relative humidity.

Fluorimeter. A fluorimeter similar to that described by Sherburne and Beiswanger (4) was used. It is illustrated in Figure 3.

Ultraviolet light was directed through a filter removing any visual light present onto washed fabric positioned 45° to the illumination. Normal to the illuminated side of the fabric was a photocell with a filter interposed for removing ultraviolet light. A galvanometer with two variable resistances in parallel was attached to the photocell. With this arrangement, only the excited visible fluorescence from the washed fabric reached the photocell. The fluorimeter was standardized by removing the filter between the photocell and sample, and placing a white plaque in the sample position. Then the galvanometer was adjusted to register an arbitrary value of 20, permitting fabric fluorescence readings with the filter in place to range from 0 to 50.

Macbeth Super Skylight Illuminator. Light: Daylight plus ultraviolet supplement.

Procedure

A 2.50 g. sample of detergent was transferred to a two liter stainless steel beaker and made up to 1000 ml. volume with 300 ppm. hard water. The solution was covered immediately and heated to 120°F. with occasional stirring to dissolve the detergent. Stock de-

Figure 3. Fluorimeter diagram

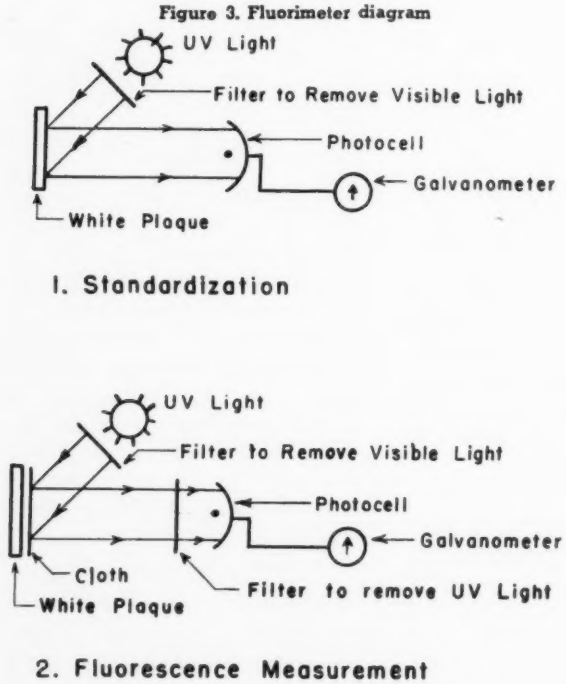
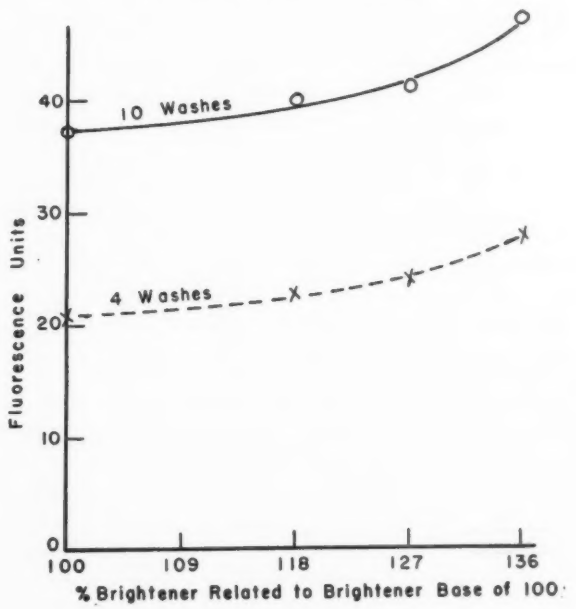


Figure 4. Effect of brightener concentration on washed fabric fluorescence



tergent solution was made up fresh daily and not exposed to light. The 50 g. load was placed in a Terg-O-Tometer tub and the slotted cover lowered to the point of solution surface. Then 1000 ml. of detergent solution was added and the machine was automatically operated by the Gra Lab timer for ten minutes. The covers and agitators were then removed and rinsed under tap water. A set of swatches was hand-wrung and put through the wringer, and the wringer rinsed. Finally, the tubs were dumped and rinsed with tap water and returned to the Terg-O-Tometer. The agitators were replaced.

One thousand milliliters of water were preheated to 120°F. for each of the two rinses. The machine was run for two minutes for each rinse with tubs covered and loads were wrung as before after each rinse.

The rinsed swatches were extracted in the Bock extractor for 1½ minutes, ironed at 300 - 350°F. for 15 seconds, and conditioned 2½ hours in the Bowser cabinet. Fluorescence values of the conditioned washed swatches after four and 10 washes were measured with the swatches arranged in triple thickness. Values for each set were averaged and then reported as net fluorescence after subtracting the value of conditioned unwashed cloth.

Net Fluorescence = Fluorescence Washed — Fluorescence Unwashed.

After 10 washes, the four sets of conditioned swatches were placed in the Macbeth "Super Skylight" (Daylight + UV) and were evaluated for comparative whiteness by a panel of 15 personnel. Each member of the panel compared and rated only two sets of swatches at one time until six combinations were evaluated. Results of these evaluations were analyzed for significance at a 95 per cent level of confidence. There was a significant difference between samples where 12 or more of the 15 personnel were in agreement in comparing two sets of swatches.

Discussion

The brightener used in this study was nylon substantive and nylon fluorescence provided better data precision than that of cotton.

Figure 4 shows the fluorescence measurements on the nylon portion of loads vs. percent brightener related to a brightener base of 100.

The tests were replicated twice and were run in random order. Then, fluorescence data were analyzed statistically. The 95 per cent confidence limit for the fluorescence measurements after four washes was ± 1.7 fluorescence units or ± nine per cent of the brightener base. After 10 washes, the precision was ± 1.1 fluorescence units or ± five per cent of the brightener base. In other words, a minimum spread of 18 per cent brightener is significant after four washes. After 10 washes, the minimum significant spread is reduced to 10 per cent of the brightener base content.

$$\% \text{ Stability} = 100 - \frac{\text{Fluorescence Unbleached—Fluorescence Bleached}}{\text{Fluorescence Unbleached}}$$

Panel evaluation of fabric washed 10 times showed the minimum detectable difference was 15 per cent of the brightener base. It is concluded that the fluorimeter is more sensitive than the eye for these evaluations. Therefore, fluorescence measurements on washed fabrics should be useful to characterize the relative brightener content in detergents.

Identification in Unknown Detergents

Some idea of the brightener present in an unknown detergent composition may be gained by:

1. Determination of stability of the brightener to hypochlorite bleach (5).
2. Washing a spectrum of fibers to determine affinity characteristics of a brightener.
3. Fluorescence spectrum of the washed fabric (6).

For sodium hypochlorite stability, 10 mls. of sodium hypochlorite solution containing one per cent available chlorine were mixed with 500 mls. of 0.25 per cent detergent solution. This mixture was stirred in the Terg-O-Tometer for exactly two minutes. A 25 g. cotton load (five desized unfinished cotton Indian-head swatches) was then washed in this solution for 10 minutes. Wringing, rinsing, extracting, ironing, conditioning and fluorescence measurements were made as described previously. The same test was repeated without the bleach and comparison of these evaluations was reported as stability of brightener to bleach.

Table II. Bleach Stability

Sample	% Stability of Brightener to NaOCl Bleach
Brightener A(1)	32
Brightener B	100
Brightener C	26
Detergent I(2)	90

(1) Brightenerrs A, B, and C used at equal cost in a built detergent.
(2) Detergent I is a proprietary composition.

Data listed in Table II shows that the brightener in Detergent I has similar bleach stability to Brightener B.

Further evaluation comparing the ability of brighteners to exhaust on a spectrum of fibers in a single load also aids in characterization. Here, a 50 g. load of mixed fibers was washed 10 minutes in 1000 ml. of a solution of 1.25 per cent detergent containing 0.05 per cent brightener. The high detergent concentration was selected to give an accelerated brightening effect from a single wash.

The load was comprised of one 5¼ × 16 inch swatch of each of the following fabrics adjusted to a total weight of 37.5 g:

Spun acetate suiting	No. 151	Testfabrics
Spun viscose challis	No. 260	Testfabrics
Spun Dacron	No. 751	Testfabrics
Spun Nylon	No. 351	Testfabrics
Spun Orlon No. 884, Type 41		Testfabrics

A 5½ x 21 inch desized cot-

ton "Indianhead" swatch brought the final load to 50.0 g. The wash, rinses, and other fabric treatments were the same as those described previously.

Fluorescence data for the washed fabric spectrum treated with detergents containing Brighteners A, B, and C vs. that for Detergents I are listed in Table III. It is evident that the only resemblance or similarity is between Brightener B and the brightener in Detergent I. Cotton swatches washed with these compositions had a similar pink hue when compared under Macbeth "Super Skylight" ultraviolet light. *The fluorescence spectra* were determined for these washed cotton swatches. These measurements were made by the Cary Spectrophotometer, using 368 mμ excitation and the data are illustrated in Figure 5. A similarity is noted between Brightener B and the brightener in Detergent I.

An overall study of the data at hand indicates that the brightener in Detergent I might be combinations of brighteners, such as B + C. More work is necessary to adequately characterize the functional and chemical properties of the brightener in Detergent I and compare these properties with those for known brighteners or their combinations. In this manner, the unknown brightener could be better identified.

Table III. Fluorescence of Washed Mixed Loads

Sample	Fluorescence Readings On— Acetate	Viscose	Dacron	Nylon	Orlon	Cotton	Hue on Cotton [1]
Brightener A [2]	28	38	0	8	0	68	Blue
Brightener B	5	13	0	33	1	42	Pink
Brightener C	3	43	1	11	0	48	Blue
Detergent I [3]	5	23	1	29	1	53	Pink

(1) Macbeth UV.
(2) Brighteners A, B, and C used at 0.05% in a built detergent.
(3) Detergent I is a proprietary composition.

Summary

The relative purity of a brightener is defined as its activity compared with that of a standard brightener. Relative purity of brighteners can be determined by ultraviolet absorption spectroscopy to a precision of ± two per cent based on the brightener present. Chemical analysis for salts and moisture content, which are often added as diluents, further aids product quality characterization.

A control method for relative brightener content in detergents is based on repeated washing of fabric and evaluating washed fabric in comparison with that washed simultaneously with a standard detergent. Test precision as determined by fabric fluorescence measurements was ± five per cent and by visual evaluation was ± 7.5 per cent of the brightener present after 10 washes. Precision was poorer for fabric with 4 washes.

Functional properties of brighteners in proprietary detergents are suggested as a means to characterize them. It should be possible to identify unknown brighteners by comparing their functional properties with those for knowns.

Acknowledgement:

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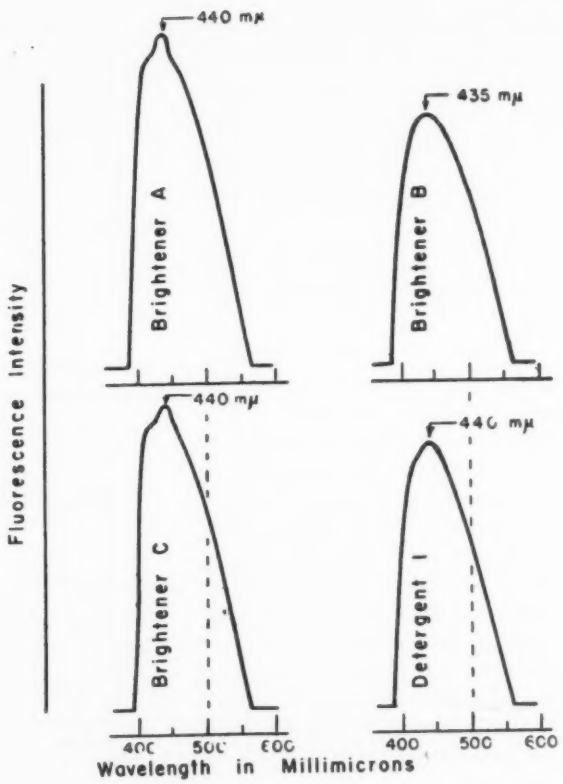


Figure 5. Washed cotton fluorescent spectra.



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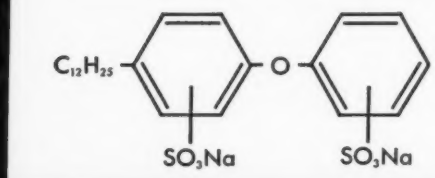
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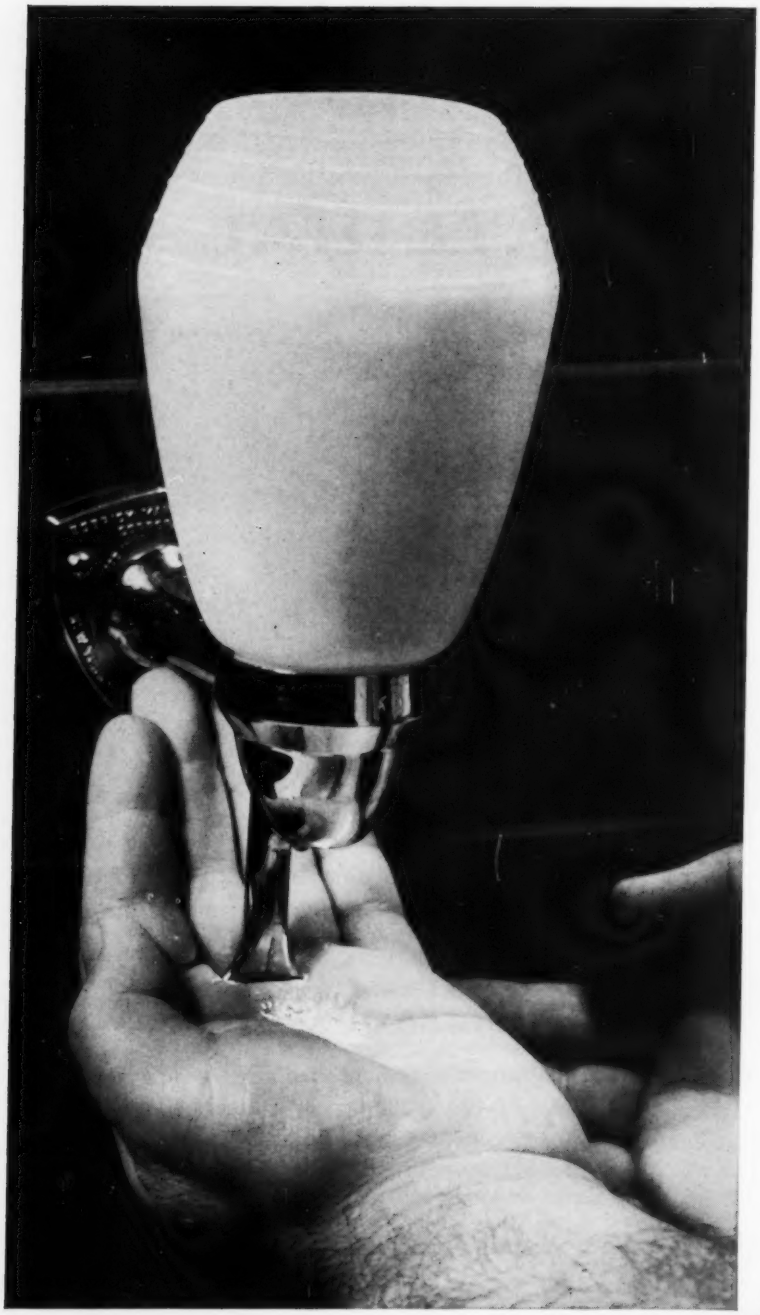
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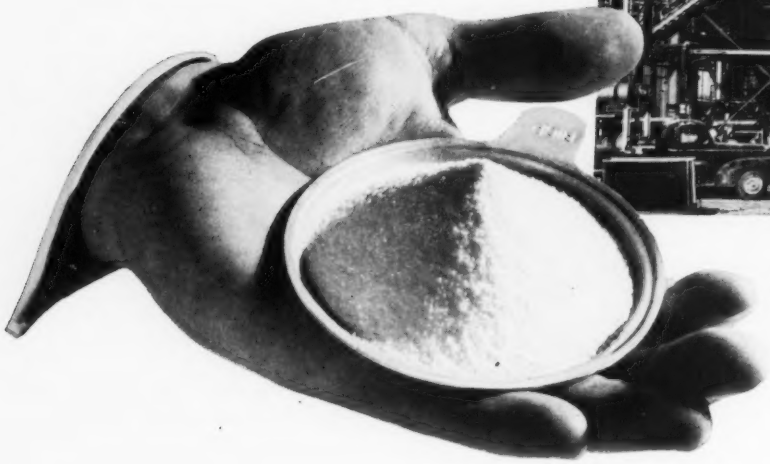
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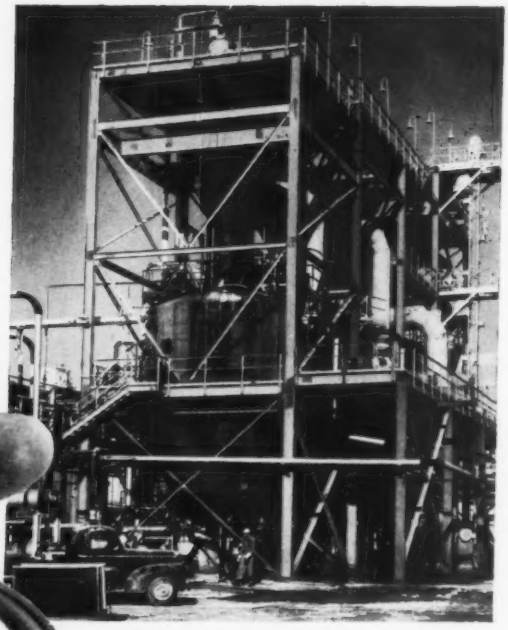
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Cardis Polymer #10	212-216	0-1	1-1½	8-10	25-30	Polymer
Cardis Polymer #8	205-210	1-2	3-5	7-10	24-28	Polymer
Cardis One†	195-200	1-2	4-5	12-16	45-55	Emulsifiable Petroleum Wax
Cardis 314®	184-189	4-6	4-5	13-16	45-55	Emulsifiable Petroleum Wax
Cardis 319®	180-185	5-7	4-6	18-20	65-70	Emulsifiable Petroleum Wax
Cardis 320®	180-185	5-7	4-5	28-30	75-80	Emulsifiable Petroleum Wax
Cardis 262®	195-200	3-5	Brown	14-17	40-45	Specially Processed Petroleum Wax
Polymekon®	195 MIN.	0-3	Yellow	0-0	0-0	Specially Processed Petroleum Wax
Polymekon® D	190-195	3-5	1-2	0-0	0-0	Specially Processed Petroleum Wax
Fortex®	190-200	3-5	2½-3½	0-0	0-0	Microcrystalline Hard & Plastic
Mekon® B-20	190-195	3-5	Brown-Black	0-0	0-0	Microcrystalline Hard & Brittle
Mekon® A-20	190-195	3-5	Amber-6 Max.	0-0	0-0	Microcrystalline Hard & Brittle
Mekon® Y-20	190-195	3-5	Yellow-3-3½	0-0	0-0	Microcrystalline Hard & Brittle
Warco® Wax #5	158-160	9-10	Ivory	—	—	Specially Processed Petroleum Wax
Warcocire 190	190-195	3-4	1-2	0-0	0-0	Microcrystalline Plastic
Warcocire 180	175-180	20-25	1-2	0-0	0-0	Microcrystalline Plastic
Warco® Wax 180 White	180-185	4-7	White	0-0	0-0	Microcrystalline Hard & Brittle
Warco® Wax 180 Brown	180-185	4-7	Brown	0-0	0-0	Microcrystalline Hard & Brittle
Warco® Wax 170-A Yellow	170-175	10-15	Yellow 1-2	0-0	0-0	Microcrystalline Plastic
Warco® Wax 170-A Brown	170-175	10-15	Brown	0-0	0-0	Microcrystalline Plastic
Warco® Wax 150-A Yellow	145-155	15-20	Yellow 1-2	0-0	0-0	Microcrystalline Plastic
Warco® Wax 150-A Brown	145-155	15-20	Brown	0-0	0-0	Microcrystalline Plastic
Warcosine®	150-155	15-20	White	0-0	0-0	Microcrystalline Plastic
Paraffin	All Grades	— FULLY REFINED —				Crystalline
Cane Wax 500	171-176	3 Max.	Light Brown	25-35	55-70	Vegetable Wax
Cane Wax 511	176-180	2 Max.	Brown	60-65	0-0	Vegetable
Cane Wax 517-711	171-173	2 Max.	Black	—	—	Vegetable Wax
Cane Wax 700	169-174	1.0-1.5	Light Brown	25-30	70-90	Vegetable Wax

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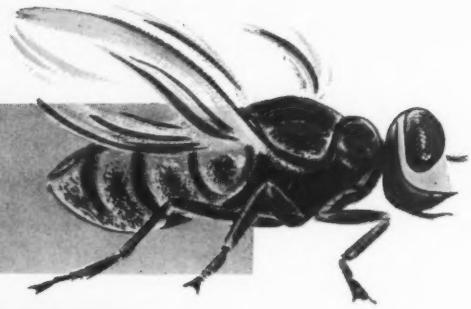
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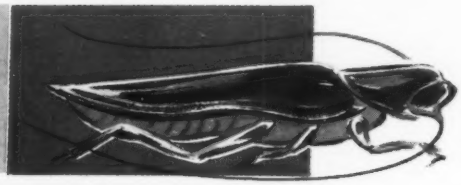
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LIGHTYNOL NO. 22 GENERAL DATA	
POLYMER	STYRENE COPOLYMER
COLOR	WHITE
SPECIFIC GRAVITY, @ 25° C	1.020
VISCOSITY, @ 25° C	LESS THAN 30 CPS
AVERAGE PARTICLE SIZE	0.05 MICRON
WEIGHT PER GALLON, @ 25° C	8.5 LBS.
RESIDUAL MONOMER	LESS THAN 0.25
PH	8.8-9.4
WATER DILUTION	INFINITE
PARTICLE CHARGE	NEGATIVE
FREEZE THAW RESISTANCE	GOOD AFTER 8 CYCLES

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C. S. M. A. Meeting in Chicago

45th midyear meeting under way features product surveys, panels.

HOSPITAL staphylococcus control, hazardous substances labelling, inhalation of hair sprays, and control of resistant flies, are among the highly topical subjects currently being discussed and analyzed by panels of experts and qualified individual speakers at the 45th midyear meeting of the Chemical Specialties Manufacturers Association. The meeting started Monday May 18, at the Drake Hotel, Chicago, and will continue through Wednesday, May 20.

One of the highlights on the program is the first CSMA annual survey of synthetic detergents. Conducted by the Soap, Detergents and Sanitary Chemical Products Division of CSMA, it covers anionics, nonionics, cationics and amphoterics used in industrial and institutional cleaning. Household detergents are excluded.

Other product surveys which have become annual features of interest to the chemical specialties manufacturers are being presented at the convention. These include the aerosol, automotive, insecticide, and industrial floor products surveys.

Monday, May 18, was devoted entirely to meetings of the board of governors of the association and of the committees and subcommittees of the six divisions of which CSMA is composed.

Donald M. King, Masury Young Co., Boston, president of CSMA presided over the first group luncheon, Tuesday, May 19, and formally addressed the meeting. Featured luncheon speaker on Tuesday was James Q. du Pont, his subject: "Pattern for Success." Mr. du Pont is administrative assistant in the Public Relations Department of E. I. du Pont de Nemours & Co., Wilmington, Del. He is the great-great-grandson of E. I. du Pont, founder of the company.

Peter C. Reilly
Treasurer



At the second group luncheon on Wednesday, May 20, William C. Stolk, president of American Can Co., New York, will give a talk on "Business and Government Relations."

A symposium on fly control Tuesday morning, May 19, highlighted a session of the Insecticide Division, and brought together men in industry, government service, and universities to discuss various aspects of this subject.

Synthetic water-soluble gums were spotlighted from all sides by the participants in a symposium held Tuesday morning by the Soap, Detergents and Sanitary Chemical Products Division.

The Aerosol Division's program on Tuesday afternoon, May 19, will be highlighted by a paper on air borne hair lacquer particles. A symposium on in-place cleaning in the diary industry will be presented the same afternoon by the

45th midyear meeting program, Chemical Specialties Mfrs. Assn. Hotel Drake Chicago, May 18-20

Monday Morning, May 18

9:00 A. M. — Board of Governors Meeting
Committee Meetings

Tuesday Morning, May 19

Automotive Division

Georgian Room
A. James Coulter, presiding

9:00 A. M.

Au-1 — Address of the Executive Board Chairman, A. James Coulter, Gulf Oil Corp., Pittsburgh, Pa.

Au-2 — Report of Nominating Committee; Election of Division Executive Board for 1960.

Au-3 — Committee Reports

Au-4 — "Present and Future Aerosol Automotive Specialties," by William Moonan, Sprayon Products, Inc., Cleveland

Au-5 — "What Automotive Products Will Be Museum Pieces in Ten Years?" by Richard Wilkinson and Arthur F. Connolly, Simoniz Co., Chicago, delivered by A. F. Connolly

Au-6 — "The Effects of Water Quality on the Corrosion of Metal in Glycol Antifreeze Solutions," by Matthew A. Boehmer and John W. Compton, Wyandotte Chemicals Corp., Wyandotte, Mich., delivered by M. A. Boehmer

Au-7 — Report on Automotive Surveys: Antifreeze, Auto Cooling System, Auto Wax, and Brake Fluid, by J. M. Russ, Union Carbide Chemicals Co., New York

Insecticide Division

Grand Ball Room
John A. Rodda, presiding

9:00 A. M.

I-1 — Address of the Executive Board Chairman, John A. Rodda, Fairfield Chemical Division, FMC, New York

I-2 — Report of Nominating Committee; Election of Division Executive Board for 1960

I-3 — Committee Reports

I-4 — Symposium on Fly Control — Moderator: Harry L. Haynes, National Carbide Co., New York; (4a) **"Current Fly Control Practices in Oklahoma,"** by D. E. Howell, Oklahoma State University, (4b) **"Fly Control for Dairy Field,"** by Ellsworth H. Fisher, University of Wisconsin, Madison, Wis.; (4c) **"Suggestions for the Control of Flies Affecting Man and Animals,"** by W. C. McDuffie, Agricultural Research Service, U.S.D.A., Beltsville, Md.

I-5 — "Insecticides and Germicides — Tools of Preventive Medicine," by L. B. Hall, U. S. Public Health Service, Communicable Disease Center, Savannah, Ga.

I-6 — Annual Household and Industrial Insecticide Survey, Joseph E. Lee, McLaughlin Gormley King Co., Minneapolis.

Soap, Detergents, and Sanitary Chemical Products Division

Walton Room
W. S. Jessop, presiding

9:00 A. M.

S-1 — Address of the Executive Board Chairman, W. S. Jessop, U. S. Sanitary Specialties Corp., Chicago

S-2 — Report of Nominating Committee; Election of Division Executive Board for 1960.

S-3 — Committee Reports

S-4 — Symposium on Synthetic Water Soluble Resins and Gums—Moderator: Leslie D. Berger, Jr., Union Carbide Chemicals Co.; (4a) **"Properties and Uses of CMC,"** by J. B. Batdorf, Hercules Powder Co., Wilmington, Del.; (4b) **"The Use of Polyvinyl Alcohol in the Formulation of Chemical Specialties,"** by Charles P. Argana, E. I. du Pont de Nenmours & Co., Wilmington, Del.; (4c) **"Polyacrylic and Polymethacrylic Acids, Salts, and Derivatives,"** by George L. Brown, Joseph Johnson, and Henry Schneider, Rohm & Haas Co., Philadelphia, delivered by G. L. Brown (4d) **"Polyvinylpyrrolidone—Properties and Applications of a Versatile Polymer,"** by Julian L. Azorlosa, General Aniline & Film Corp., Easton, Pa.; (4e) **"Non-Ionic Water Soluble Resins and Gums,"** by S. G. Sellers and M. T. Ivison, Union Carbide Chemicals Co.

S-5 — Report on First Annual Detergent Survey, by Leslie Wizemann, National Aniline Division, Allied Chemical Corp., New York

Waxes and Floor Finishes Division

French Room
C. S. Kimball, presiding

9:00 A. M.

W-1 — Address of the Executive Board Chairman, C. S. Kimball, Foster D. Snell, Inc., New York

W-2 — Report of Nominating Committee; Election of Division Executive Board for 1960

W-3 — "The Role of Plasticizers in Polymer Floor Polishes," by H. A. Naidus, H. Merken, and H. M. Szczepanik, Polyvinyl Chemicals, Inc., Peabody, Mass., delivered by H. A. Naidus

W-4 — "The Measurement and Control of Powdering in Floor Polishes," by R. H. Cahill, M. G. Koutrakis, and L. H. Perry, UBS Chemical Corp., Cambridge, Mass.

W-5 — "Light Scattering Studies of Floor Finish Latices," by H. L. Pfluger and C. Z. Pratt, Borden Chemical Co., Philadelphia

W-6 — "A Study of Factors Affecting Gloss of Floor Polishes," by Bernard Berkeley and Daniel Schoenholz, Foster D. Snell, Inc., delivered by B. Berkeley

W-7 — Report of Scientific Committee, G. R. de Napoli, Masury Young Co., Boston

W-8 — Report on the Annual Survey of Polishes, Finishes, Cleaners, by D. Schoenholz

Tuesday Afternoon, May 19

12:30 P. M. — Luncheon — Gold Coast Room, Donald M. King, presiding; "Pattern for Success," by James Q. du Pont, Public Relations Department, E. I. du Pont de Nemours & Co.

Aerosol Division

Grand Ball Room
E. J. McKernan, presiding

2:15 P. M.

A-1 — Address of the Executive Board Chairman, E. J. McKernan, Seaquist Manufacturing Corp., Cary, Ill.

A-2 — Report of Nominating Committee; Election of Division Executive Board for 1960.

A-3 — Report of the Publicity Committee, Frederick G. Lodes, Lodes Aerosol Consultants, Inc., New York

A-4 — Report of the Aerosol Products Survey Committee, Frederick G. Lodes

A-5 — "Nitrous Oxide and 'Freon C 318' Propellants for Aero-

sol Food Products," by F. W. Blodgett, E. I. du Pont de Nemours & Co., and R. C. Webster, Air Reduction Co., Madison, Wis., delivered by F. W. Blodgett

A-6 — "Methods for Determining Presence in the Air of Hair Lacquer Particles," by R. A. Fulton, Agricultural Research Branch, U.S.D.A., Beltsville, Md.

A-7 — "The Use of Seviers Extrusion Rheometer for Predicting the Behavior of Fluids in Pressurized Cans," by James S. Wolff, B. F. Goodrich Chemical Co., Cleveland

A-8 — "Blending of Different Propellants — Covering the Methods, Costs, and Analysis of Such Blends," by E. E. Husted, Union Carbide Chemicals Co.

Disinfectant and Sanitizers Division

French Room
Irving Gaines, presiding

2:15 P. M.

D-1 — Address of the Executive Board Chairman, Irving Gaines, Onyx Oil and Chemical Co., Jersey City, N. J.

D-2 — Report of Nominating Committee: Election of Executive Division Board for 1960.

D-3 — Committee Reports

D-4 — Symposium on In-Place Cleaning in the Dairy Industry — Moderator: Fred R. Geib, Dow Chemical Co., Midland, Mich.; (4a) **"In-Place Cleaning and Sanitizing of Equipment in the Dairy Industry,"** by H. G. Harding, National Dairy Research Laboratories, Oakdale, L. I., N. Y.; (4b) **"Cleaning and Sanitizing In-Place Equipment in the Food Processing Industry,"** by M. H. Gaughn, Hoffman Beverage Co., Newark, N. J.; (4c) **"Field Operations of Dairy Pipe Line Milkers,"** by R. F. Lepp, Vivian Harris, and B. F. Beaner, Sanitation Products Research Division, Ralston-Purina Co., St. Louis Mo.; delivered by R. F. Lepp; (4d) **"Cleaning In-Place Systems and Equipment for the Dairy and Food Industries,"** by John E. Beardsley, The Creamery Package Manufacturing Co., Chicago

2:15 to 4:00 P. M. Motion Picture Program — Walton Room

5:30 to 9:00 P. M. Company "Open House" (Lists available about 4:00 P. M. at registration desk)

Wednesday Morning, May 20

General Session

Grand Ball Room
George W. Fiero, presiding

10:00 A. M.

Report of the Secretary, H. W. Hamilton, Chemical Specialties Manufacturers Association, New York; Vote on Changes in CSMA Constitution and By-Laws, and Other Business, H. W. Hamilton

Report of the Treasurer, P. C. Reilly, Reilly Tar & Chemical Corp., Indianapolis

Report of the Association Counsel, John D. Conner of Cummings, Sellers, Reeves and Conner, Washington, D. C.

"What's Ahead for the American Economy," by John K. Langum, Business Economics, Inc., Chicago

Larry Le Sueur, Commentator and News Analyst, Columbia Broadcasting Co., New York

Wednesday Afternoon, May 20

12:30 P. M. — Luncheon — Gold Coast Room, Charles E. Beach, presiding: "Business and Government Relations," by William C. Stolk, American Can Co., New York

Aerosol Division

Parlor M-18
Harry E. Peterson, presiding

2:15 P. M. — Open Forum — A Discussion of the Ways the Aerosol Division Can Render Maximum Service to its Members

Committee Reports and Discussion

Automotive Division

Walton Room
C. A. Weslager, presiding

2:15 P. M.

Au-8 — Panel Discussion: "Hazardous Substances Labeling Laws, How They Affect Automotive Chemical Products"; moderator: C. A. Weslager, E. I. du Pont de Nemours & Co., Fabrics and Finishes Division; members of the panel: (8a) Robert L. Ackerly, Cummings, Sellers, Reeves and Conner; (8b) Chester M. White, Olin Mathieson Chemical Corp., Rochester, N. Y.; (8c) Herbert P. Plank, chief, Drug Division, State of Connecticut Food & Drug Commission, Hartford; (8d) Robert A. Tucker, chief, Registration and Licensing Section, Division of Food and Drugs, Indiana State Board of Health, Indianapolis; (8e) A. E. Tongue, Olin Mathieson Chemical Corp., Baltimore, Md.

Disinfectant and Sanitizers Division

French Room
F. R. Geib, presiding

2:15 P. M.

D-5 — Symposium: Staphylococcus Disease Problem: Moderator; L. S. Stuart, Head, Bacteriological Section, Plant Pesticide Division, U.S.D.A., Washington, D. C.; (5a) **"Clinical Aspects of Staphylococci and Staphylococcal Disease,"** by William McCabe, Department of Preventive Medicine, University of Illinois Medical School, Chicago; (5b) subject of paper to be announced by Robert J. Anderson, Assistant Surgeon General, chief, Communicable Disease Center, U. S. Department of Health, Education and Welfare, Atlanta, Ga.; (5c) **"Environmental Aspects of Hospital Sepsis,"** by Emil G. Klarmann, Lehn & Fink Products Corp., New York

Soap, Detergents, and Sanitary Chemical Products Division and Waxes and Floor Finishes Division

Joint Session — Grand Ball Room
Earl Brenn, presiding

2:15 P. M.

S-W — Floor Maintenance Workshop, "The Manufacture and Maintenance of Resilient Flooring"; Moderator: W. J. Wilhoyte, E. I. du Pont de Nemours & Co.; Consultant Moderator: L. D. Berger, Jr., Union Carbide Chemicals Co.; (1) **"Backed and Homogeneous Vinyl Flooring,"** by Robert K. Petry, Congoleum-Nairn, Inc., Kearny, N. J.; (2) **"Cork Flooring,"** by Richard K. Dodge, Dodge Cork Co., Lancaster, Pa.; (3) **"Asphalt and Vinyl Asbestos Flooring,"** by C. J. Bogert, Johns-Manville Corp., Manville N. J.; (4) **"Linoleum Flooring,"** by L. V. Hassel, Armstrong Cork Co., Lancaster, Pa.; (6) **"Rubber Flooring,"** by L. F. Haemer, American Biltrite Rubber Co., Trenton, N J.

Wednesday Evening, May 20

6:00 P. M. Cocktail Party — Grand Ball Room

7:30 P. M. Banquet — Gold Coast Room

Disinfectant and Sanitizers Division.

Three panels will meet on Wednesday afternoon, May 20. Representatives of the law, industry, and state enforcement agencies will participate in a discussion on hazardous substances labelling laws pertaining to automotive chemical specialties. The staphylococcus disease problem will receive attention at a symposium at which the assistant surgeon general of the U. S. Department of Health, Education and Welfare is scheduled to speak, as well as other specialists in preventive medicine, bacteriology, and microbiology.

A floor maintenance workshop, jointly held Wednesday afternoon by the Soap, Detergents and



H. W. Hamilton
Secretary



A. A. Mulliken
Asst. Secretary



William C. Stolk
Luncheon speaker

Sanitary Chemical Products Division with the Waxes and Floor Finishes Division will hear representatives of resilient flooring manufacturers. Makers of vinyl, cork tile, linoleum, rubber, and asphalt and vinyl asbestos flooring will be represented at this session.

Surveying the convention program in outline, the meeting opened formally on Tuesday morning, May 19, when technical and business reports were presented at concurrent sessions of four divisions: Automotive; Insecticide; Soap, Detergents, and Sanitary Chemical Products; and Waxes and Floor Finishes.

After luncheon on Tuesday afternoon, May 19, the Aerosol and Disinfectant and Sanitizers Division will hold their opening sessions. At the same time a motion picture program will be presented. The evening of May 19 will be devoted to "Open House" parties in the suites of member companies.

A general session on Wednesday morning, May 20, will be presided over by George W. Fiero, Esso Standard Oil Co., New York, first vice-president of CSMA. Part of the session, devoted to business, will consist of reports by CSMA officers and a vote on changes in the CSMA constitution and by-laws. One of the matters which will be voted on will be changing the name of the Soap, Detergents and Sanitary Chemical Products Division to "Cleaning Compounds Division."

Following the business meeting will be a talk entitled "What's Ahead for the American Economy," by John K. Langum, economic consultant, and an address by Larry Le Sueur, news commentator of CBS.

The general session on May 20 will be followed by a luncheon presided over by Charles E. Beach, John Stalfort & Sons, Inc., Baltimore, second vice-president of CSMA. In the afternoon an open forum will be held by the Aerosol Division. Presided over by Harry E. Peterson, Peterson Filling & Packaging Co., Danville, Ill., there will be a discussion of ways whereby the division can render maximum service to its members.

At the same time the Automotive Division and the Disinfectant and Sanitizers Division will hold separate meetings. Concurrently a joint meeting of the Soap, Detergents and Sanitary Chemical Products Division and the Waxes and Floor Finishes Division will be held. Presided over by Earl Brenn, Huntington Laboratories, Inc., Huntington, Ind., the joint session will feature the floor maintenance workshop mentioned earlier.

At the midyear meeting each division elects its executive board for 1960. Elections take place at the first meeting of each division. Those elected will take office immediately after the 46th annual meeting in Washington, Dec. 7-9. The executive boards were formerly known as division administrative committees.

Nominated as executive board chairmen and vice-chairmen, respectively of the six divisions were the following: E. J. McKernan, Seaquist Manufacturing Corp., Cary, Ill., and George Barr, G. Barr & Co., Chicago, Aerosol Division; C. A. Weslager, E. I. du Pont de Nemours & Co., Wilmington, Del., and A. E. Tongue, Olin Mathieson Chemical Corp., Baltimore, Automotive Division; F. R. Geib, Dow Chemical Co., Midland, Mich., and Claude J. D'Angio, Airkem Inc., New York, Disinfectant and Sanitizers Division; Alfred Weed, Fairfield Chemical, and Mark Hill, Gulf Oil Corp., Philadelphia, Insecticide Division; W. S. Jessop, U. S. Sanitary Specialties Corp., Chicago, and L. D. Berger, Jr., Union Carbide Chemical Co., New York, Soap, Detergents and Sanitary Chemical Products Division; Earl Brenn, and Gerard R. de Napoli, Masury Young Co., Boston, Waxes and Floor Finishes Division.

The convention concludes with a cocktail party and reception on Wednesday evening, May 20. This will be followed by a banquet and floor show.

—★—

UBS Earnings Decline

Net earnings of UBS Chemical Corp., Cambridge, Mass., for the first quarter of this year were $66,119, compared with $67,418 in 1958. Earnings per common share amounted to 40 cents against 42 cents last year.

Aerosol Hair Sprays . . .

FDA inhalation toxicity studies of six types of aerosol hair sprays show they pose no problem of safety to users

By J. H. Draize, A. A. Nelson, S. H. Newburger and E. A. Kelley*†,

BERGMANN (1) et al have recently reported on two clinical cases of pulmonary thesaurosis, suggesting that these may have resulted from inhalation of spray during use of aerosol hair spray preparations. In addition these authors stated that the subcutaneous injection in guinea pigs of the solid nonvolatile residue of a hair-spray formulation resulted in the deposition of cytoplasmic granules in the reticuloendothelial cells of the liver and spleen. This deposition was considered the result of characteristic biological reactions known to be associated with the parenteral introduction of natural and synthetic resins. These findings indicated to the authors that the human lesions which they reported were due to the inhalation of macromolecular substances contained in the hair spray.

More recently, Calandra (2) and Kay reported on inhalation exposures to two types of aerosol hair spray preparations on guinea pigs, three times daily for periods varying from 45-90 days. They failed to obtain evidence to substantiate the finding of pulmonary thesaurosis in their experimental subjects.

The report of potential dangers in the use of aerosol hair sprays led us to a comprehensive investigation of these products. A survey of aerosol hair sprays currently in use indicated that the majority of these products may be classified for our purposes into six types on the basis of their hair fixative or film-forming component. These six types are: (1) polyvinylpyrrolidone (PVP); (2) a copolymer of polyvinylpyrrolidone and polyvinyl acetate (PVP-PVA); (3) shellac; (4) dimethyl hydantoin-formaldehyde resin (DMHF); (5) modified polyacrylic acid resin (MPA); and (6) lanolin. Lanolin is not in a strict sense a hair-fixative film, but is rather an oily or unctuous hair dressing dispensed by means of aerosol propellants.

A representative sample of each of the six types of sprays was selected for our investigation. The percentage of the nonvolatile components (heating for two hours at 105°C) of each sample, representing the given types used in our investigations, is listed in Table 1. At the outset of these investigations it was realized that data on the physical characteristics of the atomized sprays would be necessary in an appraisal of their potential toxicity and safety for use. Such studies should include the determination of particle size, their distribution, concentration of material in atmosphere, as well as rate of settling from the atmosphere. The physical data on the sprays as atomized from the pressurized containers were obtained by personnel and special equipment of Agricultural Research Center, United States Department of Agriculture, Beltsville, Maryland.**

Table 1. Nonvolatile matter in hair spray types

Sample Hair Spray Type	Nonvolatile Matter per cent
PVP	1.41
PVP-PVA	1.72
Shellac	1.36
DMHF	1.6
Modified Polyacrylic acid	1.41
Lanolin	4.37

The entire range of size of particles and percentage distribution according to their size are given in Table 2. These data are analyzed in the graph in Fig. 1. The results are expressed as the average for all six sample "types". This was considered permissible since the distribution of the size of the unimpinged particles did not vary by more than 10 per cent from one sample type to another. The DMHF, and lanolin-type sprays did exhibit slightly larger particles, although well within the 10 per cent variation. Approximately 50 per cent of the particle weight represented solvent.

Particle sizes varied from one micron or less to 30 microns

*Divisions of Pharmacology and Cosmetics, Bureau of Biological and Physical Sciences, Food and Drug Administration, U. S. Department of Health, Education, and Welfare, Washington, D. C.

†Paper presented at the annual meeting, Scientific Section, Toilet Goods Assn., New York, May 14, 1959.

**We wish to express our gratitude to Dr. R. A. Fulton and Mr. A. H. Yeomans of ARS, USDA for their generous help.

in diameter, with a mass medium diameter of 8.5 microns. It is significant that 65 per cent by weight of the unimpinged spray were particles in the range of 10 and less microns in diameter. Particles three microns and less in size can readily reach the alveoli of the lung, and those in the range of three-10 microns do so less readily, whereas particles larger than 10 microns are quite efficiently removed by the ciliary apparatus of the respiratory tract (3).

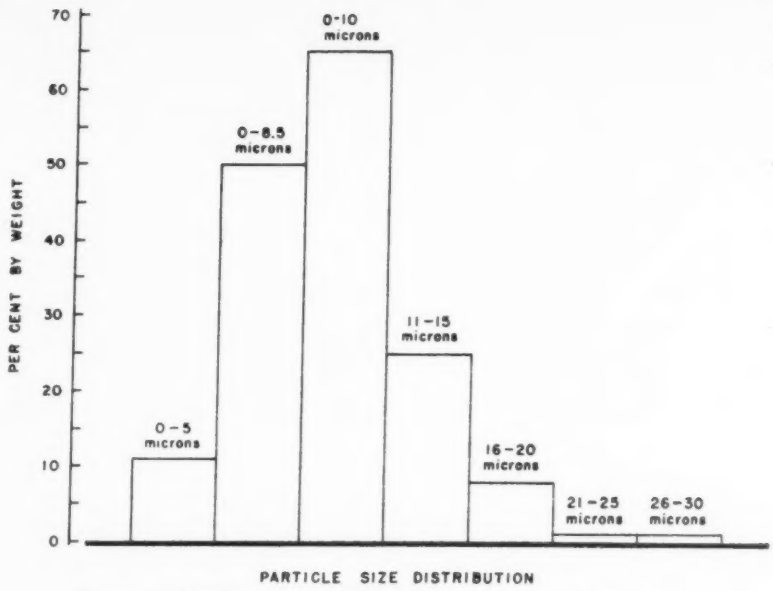


Figure 1. Distribution of particle size in unimpinged hair spray.

Human Exposures

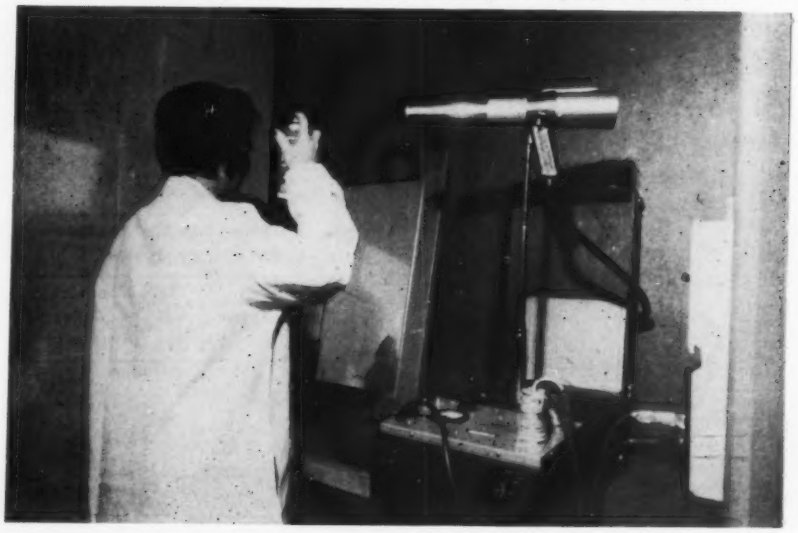
Women volunteers were used to obtain data on the six types of sprays. Prior to the experimental exposures, spray-release time was determined on a number of women during a normal hair-spraying operation. The average spray-release time was found to be 10 seconds. In order to obtain additional data to cover cases of exaggerated or excessive use, additional exposures involving 30-second spray releases were included. Each subject was, therefore, exposed to a 10- and a 30-second release of the respective spray and following each such release remained in the sprayed atmosphere in a closed cubicle for five additional minutes. The cubicle measured 5′ x 6′ x 6′ (180 cu. ft.), that is a small confined room, which might be comparable in size to a small bath or powder room (Fig. 2). Each subject was sprayed at a distance as indicated in the label directions for use on the container. If no directions for spraying were furnished, the subject was instructed to spray half the time at a distance of six inches, and the other half at 12 inches from the hair. The room was thoroughly aired after each test. A Mine Safety Appliance Company's Electrostatic Model F Sampler was used to sample the atmosphere. This device is equipped with an aluminum tube which was weighed before and after collection of sample. The sampling tube intake was placed five feet above the floor and approximately one foot in front of the woman's head. The air sampler collected particles from one-twelfth (15 cu. ft.) of the air volume in the room during the five minute sampling time. The tube was weighed five to 10 minutes after collection, and, with the exception of the lanolin type, the deposit was found to consist of dry powder.

The normal adult at rest has a respiratory rate of approximately 16 per minute. There are approximately 500 cc. of tidal air involved in each inspiration. However, all of this volume of tidal

Table 2. Distribution of particle size in unimpinged hair spray

Diameter microns	Weight Per Cent accumulative
1 and less	0.1
2	0.5
3	2
4	5
5	11
6	19
7	35
8	45
9	55
10	65
15	90
20	98
25	99
30	100

Fig. 2. Air samples in position to collect sample of sprayed atmosphere.



HUMAN EXPOSURES TO HAIR SPRAYS

SAMPLE "TYPE"	SPRAY RELEASED		NON-VOLATILE SPRAY	
			in 15 cu. ft. of air	inspired in 5 min. exposure
	sec.	gm.	gm.	gm.
PVP	10	12.0	0.0020	0.00013
	30	35.7	0.0050	0.00033
PVP-PVA	10	12.0	0.0020	0.00013
	30	27.0	0.0060	0.0004
Shellac	10	8.8	0.0024	0.00016
	30	22.5	0.0038	0.0002
DMHF	10	3.5	0.0005	0.00003
	30	13.7	0.0042	0.0003
Modified Polyacrylic Acid	10	8.7	0.0045	0.0003
	30	12.3	0.0090	0.0006
Lanolin	10	12.5	0.0067	0.0004
	30	35.6	0.0310	0.002

Table 3. Weight of the nonvolatile portion of the various sprays in the atmosphere following 10 seconds, and 30 seconds treatment of hair.

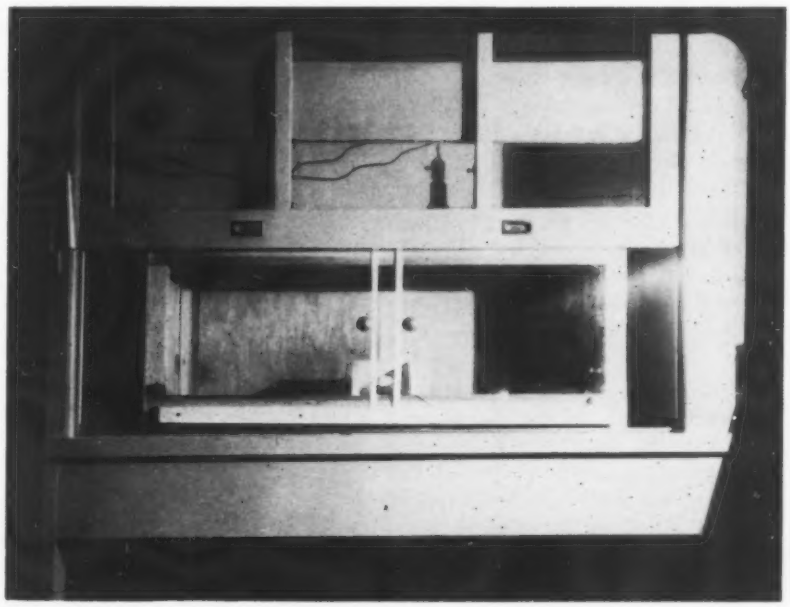
air does not reach the alveoli of the lung, since approximately 150 cc. of this total is designated as "dead air" and occupies the nasal cavity, larynx, trachea and bronchial tree. Therefore, only 350 cc. of new tidal air reaches the alveoli per inspiration (4). This permits a calculation of total inspired air volume reaching the alveoli of the lung of the subject during the five minute period of exposure, namely, 350 cc. x 16 x 5 = 28,000 cc., or approximately one cu. ft. of air.

It must be admitted that minor adsorption of spray material may take place from the "dead air" in the upper respiratory tract; such amounts are regarded as inconsequential. The data obtained on the amounts collected in the sampler tube during five minutes of exposures for both 10- and 30-second releases for each type of spray are summarized in Table 3.

Animal Studies

Rabbits were used for the acute and the 90-day inhalation studies. The choice of this animal subject in preference to the mouse, rat or guinea pig was based on the fact that the rabbit is less likely than the latter to develop respiratory-tract ailments incidental to the chilling effects of the spraying procedure. An exposure box with inside measurements of 20" x 22" x 48" equipped with sliding glass doors in front permitted the necessary manipulations of an operator and observation of the subject's behavior during exposure (Fig. 3). Five animals partially immobilized were exposed during each operation. The exposure chamber was installed in a large ventilating laboratory hood to permit the rapid clearing of the atmosphere in the chamber between exposures. There were no special preparations of the animals prior to exposure. During exposure the animals' eyes were protected with close-fitting, and easily removed goggles (Fig. 4). The frequent, repeated exposures necessitated protection of the eyes to avoid injury.

Fig. 3. Animal exposure chamber placed in a large ventilating hood.



The operator directed the released spray to the back and sides of the subject's head; however, it was impossible to avoid a small amount of spray from reaching a limited portion of the upper body. The spray was released at distances varying from six to 12 inches from the subjects' heads (Fig. 5). Upon removal from the exposure chamber, the head and that portion of the upper body exhibiting contamination with spray material were sponged with damp towels using water or dilute alcohol for the spray materials insoluble in water. This precaution was taken to avoid the oral ingestion of materials which may have settled on the fur of the animals.

Acute Inhalation Exposures

In the acute inhalation experiments the animals were subjected to 30-second spray releases every half hour until the contents of the given container (275-400 grams) were exhausted. With the exception of one hour during noon time, the animals remained (partially immobilized) in the exposure chamber. The glass sliding doors were held slightly ajar to permit

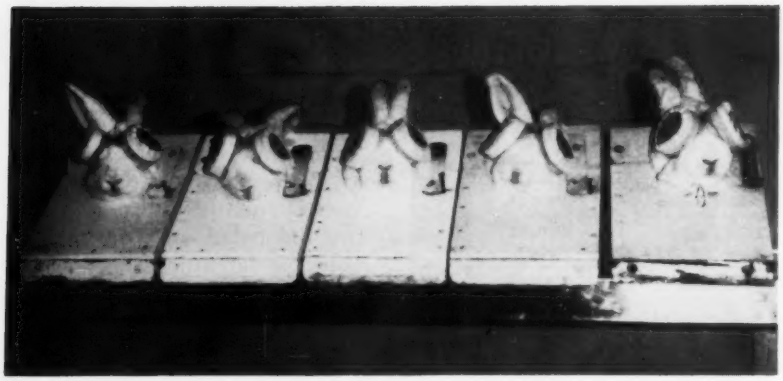


Fig. 4. The immobilized animals are protected with goggles to prevent eye injury during spray operation.

some ventilation. The total weight of spray released during 30 seconds varied with various samples from 20-35 grams of material, the mean being approximately 30 gms. per 30 seconds of release.

The subjects exhibited no adverse effects during the intensive acute exposure with any of the sample types used, nor were any untoward effects noted in the succeeding four days following exposure. At this point the subjects were sacrificed for gross and histopathological examination of their tissues. The latter was limited essentially to respiratory tract and lymphoid structures, and was negative, as was the gross examination.

90-Day Inhalation Studies

Each group of five subjects assigned to each of six spray types were carefully screened before assignment to the experiment. A radiograph of the chest and upper body was taken. Hematology included the determination of per cent hemoglobin, the hematocrit, and differential count of white cells. Hematological examinations were also made at 30-day intervals during the experiment.

In these 90-day studies, exposures were made twice daily (A.M. and P.M.). Following the 30-second spray release, animals remained in the sprayed atmosphere of the chamber for an additional 15 minutes. Upon release from the chamber, the animals were cleaned as indicated above and returned to their housing cages.

At the termination of the 90-day exposures, radiographs of chest and upper body were repeated, hematological examinations made, and the subjects sacrificed for the gross and histological examination of their tissues.

The animals exhibited no adverse effects during or at completion of the 90-day exposures. Radiographs revealed no alterations in the lungs and no retention of radiopaque material in this organ. Hematological examinations during and following the 90-day exposures revealed no blood abnormalities.

Pathology

At autopsy, gross examination of the rabbits in the 90-day inhalation experiment was entirely negative except that two had slightly pitted kidneys, a lower than usual incidence. Six untreated rabbits of the same size, concurrently taken from stock to serve as controls additional to the general run of our rabbits, were also negative. For each of the test animals (with a few partial exceptions) hematoxylin-eosin stained paraffin sections were made of formalin-fixed liver, kidney, spleen, bone marrow (Wright-Giemsa stained smear also), mesenteric lymph node(s), and deep cervical lymph node, and the fatty mass in the upper mediastinum containing the relatively small thoracic lymph nodes and the more or less involuted thymus; also, of lung fixed in both 10 per cent formalin and in Bouin's fluid, and trachea fixed in Bouin. For each control rabbit sections were made of lung, trachea, and the various lymphoid structures mentioned above, and bone marrow smears were also made.

Special stains were limited to periodic acid-Schiff and Congo Red. The former was used because it is a good survey stain for complex carbohydrates, and the latter because it is used for detecting polyvinylpyrrolidone. It should be noted here that the complete composition of some of the test sprays in the present study was not known to us, that special stains do not exist for probably the majority of the total complex of ingredients of the sprays, and that as a generality in thesauroses there are changes visible in the routine stains. Fourteen test (two or three animals per group) and all six control rabbits had tissue slides stained by the PAS method (with or without enzymatic digestion to remove glycogen) which included from one to all of the following: lung, spleen, thymus, thoracic lymph nodes, deep cervical lymph node, and mesenteric lymph node(s). Fifteen test and all six control rabbits had slides covering the same range of tissues stained with Congo Red.

Results and Comments: The results of the pathological study were so negative that they can best be given in summary form.

1. None of the organs examined showed any suggestion of an epithelioid cell or foam cell or other macrophage storage phenomenon induced by the hair sprays. No epithelioid cell proliferation was seen anywhere. The only accumulation of foam cell macrophages anywhere was in a mesenteric lymph node (but not in the other lymphoid structures, lung, etc.) of one rabbit receiving the lanolin type spray; this unique accumulation was not attributed to the treatment.

2. The lymph nodes, particularly the mesenteric but also the

(*Turn to Page* 149)



EWING GALLOWAY PHOTO

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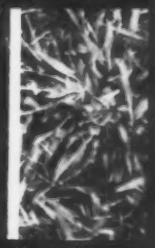
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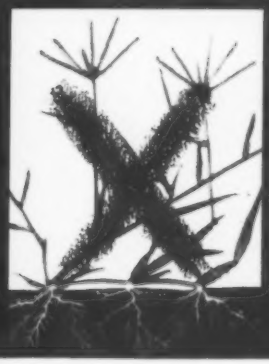
A SPECIAL REPORT

The demand for Chlordane has jumped sharply in the past year. Distributors, Dealers, and Pest Control Operators are finding that the mere mention of Chlordane is a tremendous selling aid. This special report explains why Chlordane's many long-time friends suddenly have a tiger by the tail.









How Chlordane helps make your business more profitable!

RECOGNITION- A recent independent survey showed that Chlordane has by far the highest consumer recognition of any patented insecticide chemical. Close to 70% of people surveyed know what it is and what it's used for. If Chlordane appears on a label, or if a Pest Control Operator mentions that he uses Chlordane, 7 out of 10 customers know that they are getting a chemical of established effectiveness. In this way, the name "Chlordane" adds to the value of insect control products and services.

RECOMMENDATIONS—Chlordane has proven to be exceptionally versatile. Year by year, the uses for which it is recommended have increased. State and U.S.D.A. publications list it for the control of many of the most troublesome insects found in the United States. These recommendations influence customers to seek Chlordane specifically, instead of just "an insecticide".

RESIDUAL ACTION—To Pest Control Operators especially, Chlordane's long record of residual effectiveness is like money in the bank. Homes treated by PCO's more than 11 years ago are still getting 100% effective residual protection against termites from the original Chlordane application. No other insecticide has such a long record of residual effectiveness.

ECONOMY—Chlordane continues to be the most economical chemical widely recommended for termite control. It is equally economical for lawn and garden insect control.

PHYSICAL PROPERTIES—Chlordane is alkali stable, non-crystalline, and has no offensive odor. These properties give Chlordane longer residual action in all types of soils, and make it much more desirable for use around dwellings.

NEW MARKETS—Demand for Chlordane has increased steadily. It has long been America's leading lawn and garden insecticide and termite control chemical. In the past year, though, demand has skyrocketed. This is partly because of Chlordane's reputation, and partly because of new markets that have developed recently. In the lawn and garden field, Chlordane has become one of the most popular crabgrass control chemicals. Pest Control Operators have also gained new business by offering crabgrass-insect control service. In the pest control field, Chlordane's effectiveness has made it an important part in the big boom in pre-treatment of construction for termite control.

PROMOTION—Because of its versatility and effectiveness, Chlordane receives a great deal of publicity. In addition, Chlordane is extensively advertised in mass media and local newspapers. Pest Control Operators, formulators, distributors, and dealers also receive strong sales support. Promotional materials, incentive plans, educational and news services, and other free materials help to increase Chlordane's profitability at all levels.

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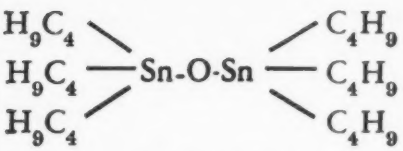
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PHYSICAL PROPERTIES

Typical

Physical form	slightly yellow liquid
Molecular weight	596.0
Boiling point	180°C/2 mm
Freezing point	lower than –45°C
Specific gravity	1.17 at 25°C
Flash point	above 212°F (Tag closed cup)
Viscosity	4.8 centistokes at 25°C
Solubility in water	practically insoluble
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Broth Dilution Method

Staphylococcus Aureus	1.0
Candida albicans	1.0
Bacillus mycoides	0.1
Bacillus subtilis	1.0
Sphaerotilus #10	1.0
Desulfovibrio desulfuricans	10.0
Bacterium ammoniagenes	1.0
Microsporum audouini	0.5
Aspergillus niger	0.5
Aspergillus terrus	0.5
Aspergillus flavus	0.5
Chaetonium globosum	1.0
Penicillium digitatum	0.5
Penicillium expansum	1.0
Penicillium funiculosum	3.0
Penicillium piscarium	1.0
Pullularia pullulans	0.5
Trichoderma viride	1.0



Automotive Chemical Specialties

By Bernard Berkeley*
Foster D. Snell, Inc.
New York

Part II

IN general, chrome polishes consist of hard abrasives such as crystalline silica, feldspar, sea sand and pumice dispersed in either neutral or acid solutions. Typical compositions are shown at right.

Chromium Polishes
(Parts by Weight)

Neutral Paste	
Soft soap	23
Water	45
Crystalline silica	30
Glycerine	5

Acid Polish	
Thickener	1.5
Phosphoric acid, 85%	10.0
Glycerine	3.0
Inhibitor	0.2
Non-ionic surfactant	0.3
Water	85.0
	100.0

The removal of surface rust and regeneration of clean and polished metal is only half the job. As we well know, the bright surface appearance is transient and requires an immediate application of a protective coating. Materials used for this purpose have included waxes, alkyd resins, nitrocellulose lacquers and synthetic resins. Although there are still problems in this area to be solved, such as, yellowing and adhesion, the current trend appears to be favoring the use of acrylic resins. The most popular means of application is by aerosol dispenser.

Tire Cleaners

The introduction of the white sidewall tire brought with it a demand for cleaning compounds capable of maintaining the pristine appearance of the new tire. Early work indicated that the majority of stains and traffic soil could be easily removed by light duty soap and detergents. However, the stubborn soils and in particular the "curb burns" required more drastic action in order to achieve satisfactory results. The oldest and best known tire cleaner compounds are the abrasive pastes such as the composition described on the following page.

*Paper presented during 45th annual meeting, Chemical Sepcialties Manufactures Association, New York, Dec. 10, 1958.

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For excellent leveling in floor polishes, even on problem tiles. NeoRez ST is a new polystyrene emulsion well worth your prompt consideration.

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Paste Tire Cleaner

Parts by Weight	
Pumice, 100 mesh	40
Silica, 200 mesh	15
Sodium stearate	10
Glycerine	4
Soda ash	2
Titanium dioxide	1
Water	28
	100

The gel-type soap systems containing a slight excess of caustic alkali represent another well known form of tire cleaning compound. By virtue of its high viscosity, the gel compound clings to the vertical tire surface and permits a relatively long contact period.

A typical composition is shown below:

Gel-Type Tire Cleaner

Parts by Weight	
Sodium oleate	3.5
Sodium hydroxide	0.2
Glycerine	1.5
Pine oil	1.5
Dye	trace
Water	93.3
	100.0

The above product has since been followed on the market by more fluid compositions which lend themselves to application by finger-spray devices.

The major variations in formulas that exist today involve the incorporation of synthetic wetting agents, glycol-ethers and organic sequesterants.

Rubber Lubricant

The development of compositions to preserve and lubricate rubber parts used in automobiles has gone through several phases which included products based on

a) oxidized asphalt dissolved in naphtha

b) alcoholic castor oil solutions and

c) aqueous sodium silicate solutions and

d) glycerine soap solutions

e) silicone emulsions

Modern products are used for mounting and dismounting tires and tubes as well as for preservation of bushings, stabilizers, shackles, grommets, and fittings. For this purpose, best results are achieved by glycerine in combination with colloidal graphite as illustrated in the typical formulas shown at top of next column.

Glass Cleaners, etc.

The modern automobile comes equipped, as does the conscientious gas station attendant, with window cleaning solution. Starting with dilute alcohol and glycol solutions, glass cleaners



Typical Rubber Lubricants

A

Parts by Weight	
Glydag G	2
Glycerine	48
Water	50
	100

B

Potassium oleate	4.5
Octyl alcohol	2.5
Colloidal graphite	0.3
Glycerine	12.0
Water	80.7
	100.0

evolved through various stages of development which included ammonia solutions, abrasive cleaners, silicone sprays and aerosol foams. However, for all practical purposes, alcohol and glycol solutions with the barest trace of wetting agent appear to have withstood the test of time. The automatically dispensed windshield solutions which serve the dual function of de-icing as well as cleaning are necessarily composed entirely of low molecular weight alcohols and glycols.

Materials used exclusively for de-icing of windshields have appeared in a variety of packages including squeeze bottles, finger-sprays, impregnated cloths and aerosol containers. The most popular combinations have been based on solutions of ethylene glycol and isopropanol although various salts have been commonly used. Recent studies conducted for government agencies indicate that lithium salts provide excellent de-icing action.

The need for anti-fog compounds has diminished as a result of greater use of heater equipment in automobiles. However, it is possible to combine glass cleaning and anti-fog properties in the same product as illustrated by the following example:

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(Turn to Page 181)



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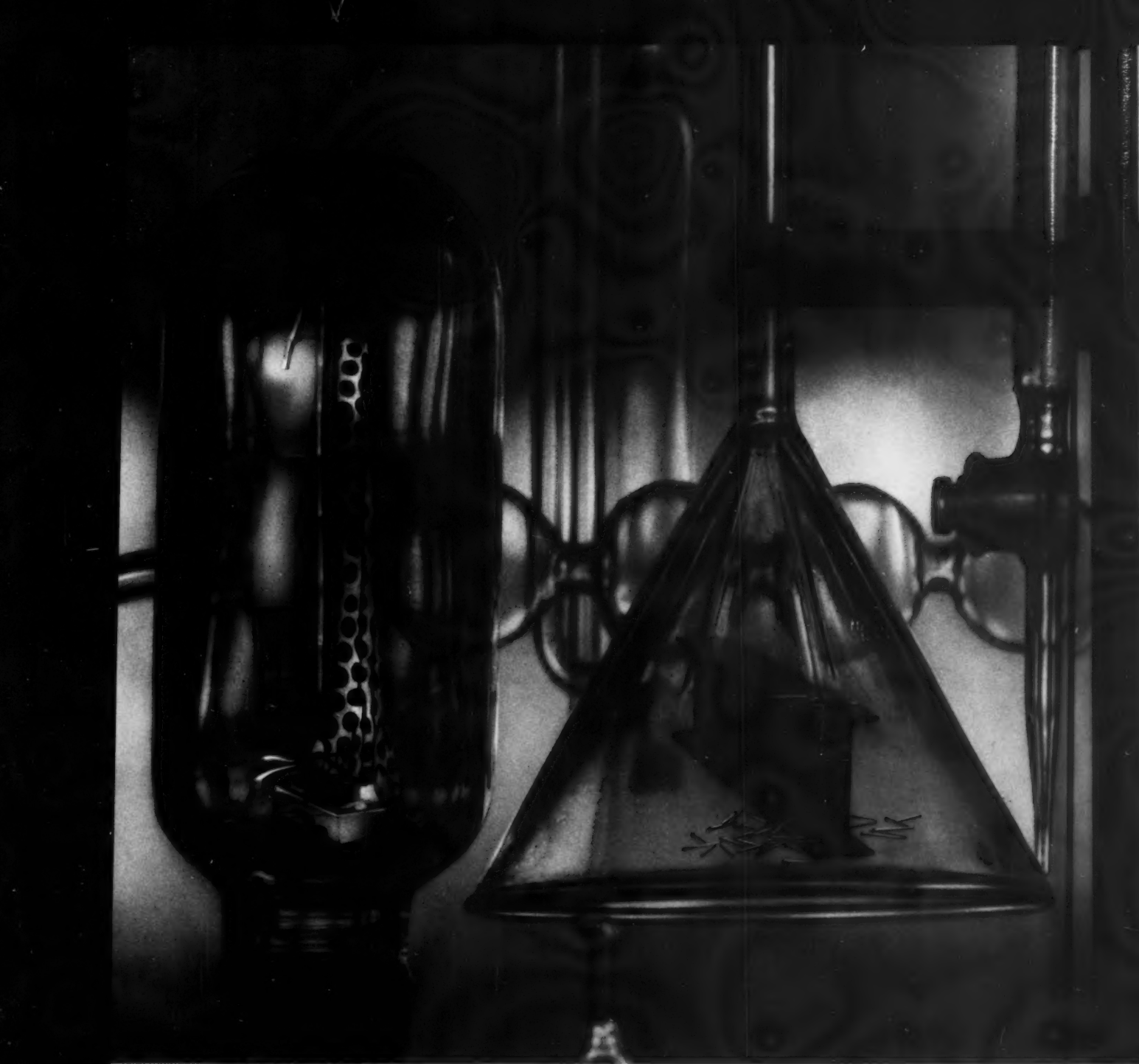
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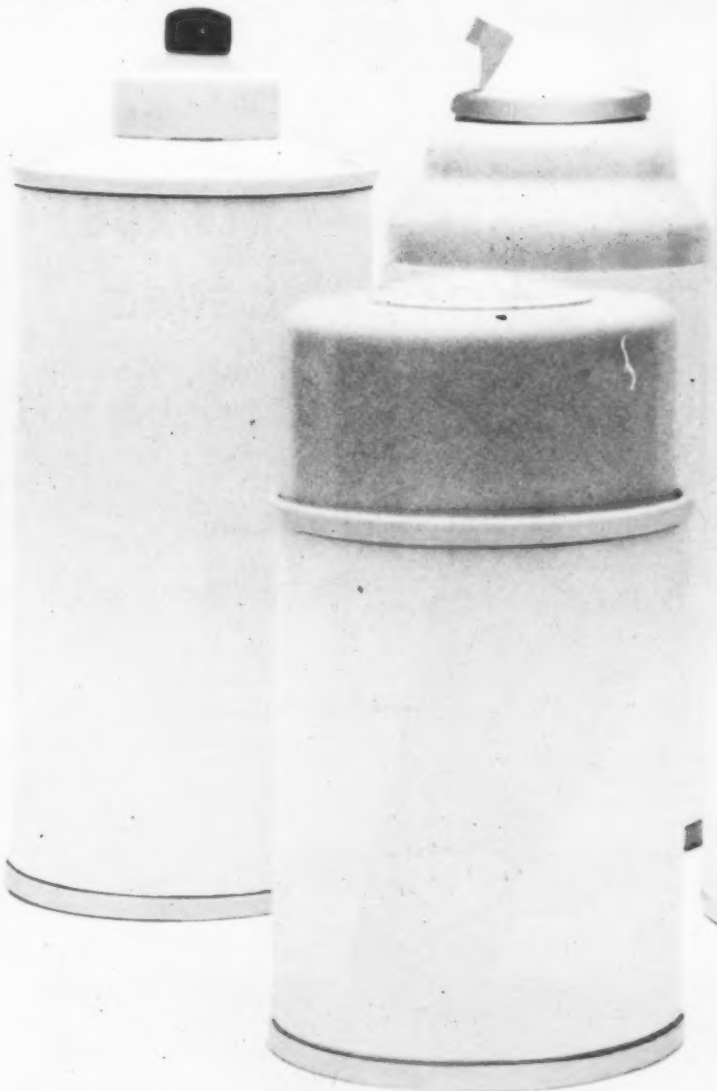
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Textile Resistance Test*

Official Methods of Chemical Specialties Manufacturers Association for Determining Resistance of Textiles to Insect Pests

I. Introduction

A. History

Recognizing the need for a standard method of determining the resistance of textiles to fabric pests, the CSMA Insecticide Scientific Committee began work on this problem in 1939. Early work of the Special Committee on Mothproofing was headed by Fred W. Fletcher, while later studies that led to the adoption of the tentative method in 1951 (Ref. 1) were directed by George R. Ferguson. Others who were especially active in the project were committeemen E. J. Campau, H. E. Fairchild, A. H. Goddin, R. E. Heal, G. S. Kido, A. C. Miller, and F. H. Nelson. Advisory committeemen who aided were S. C. Billings, Hamilton Laudani, and W. S. McLeod. Since 1955 D. J. Ott has been chairman of the Special Committee.

A list of selected references appears at the end of this presentation. These are offered to record the more important recent committee activities and as a guide to new workers in the field of mothproofing.

B. Scope

1. These official methods of test cover biological procedures for determining the resistance to insect pests of textiles that contain wool or other susceptible fibers. The test methods described here are not concerned with the various procedures for treating textiles or with their subsequent handling, ageing, washing, cleaning, etc., but only with the biological methods to be used to measure the resistance of textiles to insect attack. The term "insect pests" shall be construed to apply to clothes moths and carpet beetles. Two procedures are covered, as follows:

a. *Excrement Weight Method*—For use only when the tests are made with carpet beetles.

b. *Fabric Weight Loss Method*—For use when the tests are made with the webbing clothes moth. This method may be used for tests with carpet beetles when the technique and results of this method are preferred or when comparative tests using both insects are made.

2. The extent of damage to the test specimens shall be determined by the excrement weight method or by the fabric weight loss method, whichever is applicable.

II. Apparatus

A. Test Cages

The cage for conducting the tests may be any shallow glass or metal flat-bottomed container of a size large enough to permit the insects to be either in contact with or off the horizontally placed test specimen. It shall be well-ventilated and provided with a 60-mesh metal screen cover to avoid fumigating action of volatile mothproofing agents.

B. Test Insects

1. Black carpet beetle, *Attagenus piceus* (Oliv.)—Larvae shall be used from cultures maintained as in Appendix I. Larvae shall be in the weight range of 6 to 7 mg. each. Only larvae shall be used that pass through a U. S. Standard Sieve Series No. 14 sieve and are retained on a No. 16 sieve as described in App. IE.

Black carpet beetles shall be of the CSMA strain. This strain, formerly known as the Geigy Strain, was adopted as official in December, 1956, following cooperative tests with four strains (Ref. 7).

2. Webbing Clothes Moth, *Tineola bisselliella* (Hum.)—Larvae shall be used from cultures maintained as described in Appendix II. Larvae shall be 25 to 27 days old as measured from the date of egg deposition to the time they are put on test. Older larvae may pupate during the test period.

3. Furniture Carpet Beetle, *Anthrenus flavipes* Lec.—Larvae shall be used from cultures maintained as described in Appendix III and may be used as alternative test insects with the black carpet beetle. Larvae shall be six weeks old when put on test as measured from the time of egg deposition. The feeding propensities of the two species are similar.

4. Other Species—Other species of fabric pests may be used for obtaining supplementary data insofar as the test methods herein described are applicable.

C. Test Specimens

1. Fabrics—Specimens, each with 2 sq. in. area shall be cut from widely-spaced portions of the fabric.

2. Yarns—Test specimens of each yarn shall be prepared by uniformly winding one layer of yarn on a square or rectangular piece of glazed cardboard, glass, or metal with an area of 2 sq. in. The surface of the glazed cardboard, metal or glass shall be substantially covered by the yarn.

3. Carpets—Test specimens, each with an area of 2 sq. in., shall be cut from widely-spaced portions of the carpet. The edges of the specimens shall be secured by coating the backing yarns with cellulose nitrate dissolved in acetone. For the weight loss method, specimens shall be prepared by stapling pieces of yarn removed from the specimen to pieces of glazed paper, each having an area of 2 sq. in. so that the surface is covered substantially by the yarn.

4. Control Specimens for Insect Activity—Control specimens of the standard pure, undyed, scoured wool fabric (Note 1), each having an area of 2 sq. in., shall be exposed under the same conditions as the test specimen. If the fabric or yarn to be tested has been treated with some form of insecticide for the purpose of increasing its resistance to insect pests, specimens of the same fabric or yarn in the untreated condition should be exposed for comparison, if possible.

5. Number of Test Specimens—The number of test specimens required is given under the respective methods of test.

(Note 1—The standard fabric may be purchased from Testfabrics, Inc., 55 Vandam Steet, New York 13. Specify AATCC moth test cloth.)

*Accepted as official test method March 25, 1959.

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6. Condition of Test Specimens—The test specimens shall be free of volatile solvents or other carriers used in the application of the treatment, and free of any solvents or auxiliary agents used in any subsequent durability test.

7. It is important that various lots of fabric for control specimens and lots of fabric and other materials used as rearing medium be thoroughly checked to determine their suitability prior to use.

III. Test Methods

A. Excrement Weight Method

(Applicable for Tests with Black Carpet Beetle and Furniture Carpet Beetle)

1. Procedure

a. At least four test and four control specimens shall be prepared in accordance with IIC.

b. Each test specimen and control specimen shall be freed of any loosely adhering dirt or dust and placed face down in a separate test cage. Ten larvae, as specified in IIB, shall be used for each test. The larvae shall be placed on the surface of the specimen, and the cage covered as specified in IIA.

c. Incubation—The cages containing the test specimens and larvae shall be held for 14 days at a temperature of 80 plus or minus 2°F. and a relative humidity of 55 plus or minus 5 per cent. Light shall be excluded.

2. Determination of Damage and Insect Survival

a. The extent of the damage to the test specimens shall be determined by the quantity of excrement deposited.

b. The quantity of excrement deposited during the test period shall be determined as follows:

(1) Remove and record living and dead insects. Survival counts shall be made in all cases, as they are important in demonstrating the vitality of the test larvae.

(2) Remove test specimen from cage and by alternately tapping and brushing transfer all loose material, excrement, exuviae, etc., back into the test container.

(3) Transfer contents of cage into a No. 3 Gooch crucible, and by repeated tapping of the crucible, the excrement shall be sifted through the perforations into one of a pair of matched watch glasses.

(4) The weight of excrement is determined by using an analytical balance having a minimum sensitivity of 0.2 mg. For the purpose of this test, all material that sifts through the perforations of the Gooch crucible shall be construed as excrement.

3. Report

a. The report shall include the following information for each test specimen of the treated sample and the untreated controls:

(1) Weight of excrement in milligrams.

(2) Number of larvae alive.

b. The test sample shall be considered satisfactorily resistant to carpet beetles if an average quantity of excrement of not over 5 mg. per specimen is deposited, provided that no single specimen shall show more than 6 mg. of excrement and that under the same conditions the controls shall show an average quantity of excrement of not less than 15 mg. per specimen.

c. The test shall be invalid if the quantity of excrement deposited on the control specimens averages less than 15 mg. per specimen, or if less than 90 per cent of the control larvae survive.

B. Fabric Weight Loss Method

(Applicable for Tests with Carpet Beetles and Clothes Moths)

1. Procedure

a. Test Specimens—Two sets of at least 8 specimens each, one set from the material to be tested and the other from the standard control fabric (Note 1) shall be prepared in accordance with IIC. Four specimens of each set shall be used for feeding tests, and the other four used as humidity controls.

b. Humidity Control Test—Four specimens from each set shall be exposed to the same test conditions as the specimens used for feeding tests except that no larvae shall be added. A change in weight of the humidity check specimens is due to change in moisture content only and shall be used to correct the weights of the feeding test specimens for moisture changes. (This method of humidity correction cannot be relied upon to correct for wide variations in humidity during the observation period.)

c. First Weighing—The test specimens and humidity control specimens shall be freed of any loosely adhering dirt or dust and placed in the test cages under controlled humidity and temperature conditions IIIAlc for at least 48 hours before weighing. They shall be weighed under the same conditions as specified in IIIA2(4). The order of weighing shall alternate between test specimen and humidity control specimen, and the same order of weighing followed at the second weighing IIIB2b(3).

d. Incubation—Ten larvae as specified in IIB shall be placed on each test specimen and the test containers covered as specified in IIA. The test cages and humidity check cages are held for 14 days as specified in IIIAlc.

2. Determination of Damage and Insect Survival

a. The extent of the damage to the test specimens shall be determined by the loss of weight of the test specimens caused by the feeding of the larvae.

b. The weight loss at the end of the test period shall be determined as follows:

(1) Remove and record living and dead insects IIIA 2b(1).

(2) Specimens shall be brushed to free them of all loose material, such as excrement, webbing, cast skins, loose fibers, etc. Forceps usually are necessary to remove masses of webbing and excrement from clothes moth test specimens and containers.

(3) Second Weighing—Cleaned test specimens and control specimens and the humidity check specimens shall again be weighed in accordance with IIIB1c, after the test samples have been reconditioned at controlled temperature and humidity for at least 24 hours after cleaning and removal of insects.

(4) Loss of Weight—Loss of weight, in milligrams, due to feeding of the test larvae, as adjusted for humidity changes, shall be calculated as follows:

$$L = \frac{AC}{B} - D$$

where:

L = adjusted loss of weight in milligrams due to insect feeding.

A = average weight of the four test specimens before testing.

B = average weight of the four humidity check specimens before testing.

C = average weight of the four humidity check specimens after testing.

D = average weight of the four test specimens after testing.

The above formula is applicable regardless of whether the humidity check specimens gain or lose weight.

3. Report

a. The report shall include the following for the treated sample and the untreated control:

(1) Loss of weight in milligrams.

(2) Number of larvae alive.

(3) Number of larvae pupated.

b. The test sample shall be considered satisfactorily resistant to the insect pests used if the average loss of weight due to feeding is not more than 8 mg., provided that under the same conditions the average loss in weight of control specimens is 30 mg. or more. No individual specimen shall show more than 10 mg. loss of weight.

c. The test shall be invalid if the amount of feeding results in less than 30 mg. average weight loss per control specimen or less than 75 per cent of the control larvae survive.

d. Individual weight records of test specimens and humidity checks before and after the test may be reported if desired. Humidity checks should show no more than 5 per cent variation in weight before and after the test.

4. Referee Test

a. In the event of dispute, a disinterested laboratory shall conduct the tests as follows:

(1) Weight loss methods shall be used for both carpet beetles and clothes moths.

(2) The number of test specimens shall be doubled.

(3) All other conditions heretofore set forth shall apply.

(4) The results of the referee test shall be final.

Appendix I. Procedure for Rearing and Handling the Black Carpet Beetle

A. Scope

The standardized procedure for rearing test insects is an essential part

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of the standard test procedure for determining resistance of fabrics to insect pests. The following procedure is to be used for rearing the CSMA strain of the black carpet beetle, *Attagenus piceus* (Oliv.).

B. Rearing Containers

Any suitable type of container, such as mason jars, battery jars, tin cans, with filter paper, screen or cloth covers, may be used for rearing the larvae of the black carpet beetle.

C. Rearing Medium

1. The following medium is specified:

a. Purina Laboratory Chow Meal (Note 2) which passes through U. S. Standard Sieve Series Screen No. 16 with coarse fraction discarded, or

b. 95 per cent by weight Gaines Dog Meal (Note 3) ground to pass Screen No. 20 plus 5 per cent dry brewer's yeast (Note 4).

2. Sterilize the medium to kill mites or insects that may be present. This may be done by an efficient fumigant (1 ml. carbon disulfide per gallon, preferably in sealed glass containers for one week), dry heat 176°F. for 4 hours or 212°F. for 1 hour) or wet heat (15 psi steam for 15 minutes). Fumigated medium must be spread in shallow trays and aired in a ventilated hood for one or more days before use. Overheating may destroy the food value of the medium.

3. Sterile medium should be stored in sealed containers. Before using, dry the medium, and adjust to 13 per cent moisture by adding distilled water.

a. Drying—Spread a quantity of medium to a depth of one-half to three-fourths of an inch in trays and dry to constant weight (30 to 44 hours) in a forced draft oven at 150°F. Cool the medium and temper to 13 per cent moisture immediately.

b. Tempering to 13 per cent moisture—Determine the total weight of the medium and for each 100 grams, prepare 15 ml. distilled water plus 0.38 ml. propionic acid (mold inhibitor). Sieve the medium through a No. 20 screen. Add the combined water and propionic acid to the coarse fraction retained on the screen. Mix thoroughly and continue to mix while adding the fine material that passed through the No. 20 screen. Finally, pour from tray to tray several times, pass through a No. 16 screen, and place in sealed containers until needed for cultures. The final mixture should contain 13 per cent moisture and 0.33 per cent propionic acid.

D. Insectary Conditions

The rearing room or incubator should have a constant temperature of 80° plus or minus 2°F. and a relative humidity of 55 plus or minus 5 per cent.

E. Maintenance of Cultures

1. It is possible to maintain cultures of the black carpet beetle so that larvae of testing size and age are available at all times. This can be accomplished only when overcrowding is prevented and cultures are kept well supplied with food.

2. The black carpet beetle completes its life cycle in 8 to 10 months when reared and handled under optimum conditions, described as follows:
Once each week, pass maturing stock larvae cultures through a U.S.S. Sieve Series Screen No. 16 and collect adults and pupae separately. The majority of the pupae and the mature larvae can be separated by spreading them out on Kraft paper. The larvae tend to cling to the paper when it is rolled and tilted to an upright position over a pan. The pupae fall into the pan and then the clinging larvae can be shaken into another pan. A No. 8 screen is useful for separating the small number of larvae still remaining with the pupae. The pupae are to be kept in a screen-covered jar for one week for emergence. Collect the adults emerged from the pupae collected the previous week and add to those collected from stock after discarding all deformed specimens. Count out 50 adults at random and measure their volume in a 15 ml. centrifuge tube. The volume of 50 adults should be 1.2 to 1.5 ml. if they have developed normally. Transfer the adults to a pint jar three-fourths full of medium (containing 13 per cent water). Cover the jar with a filter paper lid, and set it aside to age.

3. The majority of eggs are laid during the next 10 days, and these hatch 6 to 12 days after laying. The eggs are too fragile to be handled without injury and the jar must not be disturbed for at least 11 weeks. At this time, pass its contents through a No. 20 screen. A gentle stream of air, such as is produced by a hair dryer, is useful in removing cast skins. The larvae and coarse material (dead adults, coarse food particles, etc.) retained on the No. 20 screen are then separated by placing the material on the high end of a sloping platform (Ref. 11) or tray. By putting a light over this end, the larvae, since they are negatively phototropic, will crawl away from the coarse material and collect at the other end of the tray. The collected larvae are then allowed to crawl through nested No. 14, No. 16 and No. 20 screens under a light. After 5 minutes, the contents of the screens can be emptied into separate trays. Larvae caught in the mesh are gently stimulated with a soft brush to crawl through the screen or they can usually be removed without injury with a Ward's featherweight entomological forceps. Mites may be removed from larvae, pupae, or adults by placing the infested insects in a jar that is half filled with sterilized rearing medium and rotating the jar, screening to separate larvae from the medium, and destroying or sterilizing this food which contains mites. It may be necessary to repeat this procedure several times.

4. Measure the volumes of larvae collected in a centrifuge tube and estimate the percentage represented by each fraction, based on total numbers. For this purpose, 1 ml. contains approximately 45 larvae held on a No. 14 screen, 70 larve held on a No. 16 screen, and 90 larvae held on a No. 20 screen. The number of larvae passed through the No. 20 screen should be estimated roughly and made a part of the total. If 10 to 20 per cent of the larvae are not of a size to be held on the No. 14 screen, return all fractions of the larvae and medium to the same jar and age one or two weeks longer. The above step is quite important if satisfactory test larvae are to be obtained. When the jar first produces 10 to 20 per cent of larvae held on the No. 14 screen, collect 6 ml. of the larvae held on the No. 16 screen (approximately 400), pass them through sterile medium to remove mites, and transfer to quart jar three-fourths filled with medium. Save any remaining larvae held on the No. 16 screen for tests and discard the larvae held on the No. 14 and the No. 20 screens. Add 6 ml. of larvae held on a No. 16 screen from new cultures on each of the following three weeks before starting a new jar. These are stock larvae cultures, which will produce pupae 6 to 8 months later. Three months and five months after starting the stock cultures, remove larvae from medium by a No. 16 screen as described in 3. above, and transfer to fresh medium.

5. At the time the stock larvae are collected, test larvae may be collected by means of the No. 14 and No. 16 screens. Larvae held on the No. 16 screen are test size, and average 6 to 7 mgs. in weight. The unused larvae held on the No. 16 screen can be saved for possible use as test larvae that same week. All remaining larvae should be discarded at the end of the week.

6. A few weeks experience will determine the size of cultures meeting the requirements for sizing and use of larvae. A deviation of more than one week from this age indicates an abnormal rearing condition which may be caused by food, mites, or various other environmental or handling conditions. Abnormal cultures should be discarded.

Appendix II. Procedure For Rearing and Handling the Webbing Clothes Moth

A. Scope

The following procedure is to be used for rearing and handling the webbing clothes moth, *Tineola bisselliella* (Hum.):

(Note 2—Order from Ralston Purina Company, St. Louis 2, Missouri.)

(Note 3—Available locally or from General Foods Corporation, Box 60, Youngstown 1, Ohio.)

(Note 4—Yeasts which have proven satisfactory are (a) Brewer's Yeast Powder, Mead Johnson & Company, available at most drug stores, (b) Dry Brewer's Yeast, U.S.P. from Yeast Products, Inc., 455 Fifth Avenue, Paterson, New Jersey, with minimum potency, per gram of 150 micrograms Thiamine, 45 micrograms Riboflavin and 400 micrograms Niacin.)

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B. Rearing Containers

Wide-mouth glass jars of 1-qt. or ½-gal. capacity are suggested. The flat lid shall be replaced by coarse filter paper and held in place by the ring used to fasten the discarded lid. Other types of containers of similar size are satisfactory.

C. Oviposition Cage

Adult moths are placed in a pint jar containing 4 to 6 squares of clean, all-wool fabric 3″x3″. Allow these adults to deposit their eggs on these pieces of fabric for 2 to 4 days. At the end of this period remove the adults and destroy. Since the eggs hatch in 4 days, this is the maximum interval that may be allowed between egg collections.

Another type of oviposition cage that is used by some laboratories is patterned after that described by Heal (Ref. 8). It consists of a widemouthed tin can 6.5 inches high and 6 inches in diameter. The bottom is removed and replaced with 16 mesh screen wire. Woolen flannel is placed beneath the screen and supported in place by a cardboard circle fastened with masking tape to the rim of the can. A closure for the culture jars is soldered in place in an inverted position in the center of the lid of the can and an opening 2 inches in diameter is cut in the can lid within the area enclosed by the closure. A culture jar with emerging adults is fastened in place in the closure and a bright light shined on the glass culture jar to drive the adults into the oviposition cage. At intervals of not more than 4 days, the flannel can be removed and the eggs collected by dislodging with a stiff brush and handled as described in F. below.

D. Rearing Medium

Use clean, scoured, undyed wool cloth (Note 5.) supplemented with about one teaspoonful of autoclaved dry brewer's yeast to each 30 grams of cloth. Refer to App. IC2 for instructions on autoclaving yeast.

E. Insectary Conditions

(See App. ID.)

F. Maintenance of Culture

The adults in mature cultures shall be transferred to the oviposition cage either by suitable suction or by introducing into the container with the adults a small amount of CO_2 gas. The adults can then be removed from the container and transferred to the oviposition jar without difficulty. 400 to 500 adult webbing clothes moths will deposit approximately 4,000 eggs in two to four days. The 3″x3″ pieces of fabric are then placed in an enamel pan and vigorously brushed with a ½-inch glue brush to remove the eggs. The eggs are screened through a 40-mesh sieve and retained on a 60-mesh sieve. The eggs are measured in a graduated centrifuge tube, 0.2 ml. representing approximately 4,000 eggs. These are sprinkled on 4″x10″ strips of clean scoured wool fabric (total 25-30 grams wool) treated with about a teaspoonful of dry yeast. The roll of wool strips is then placed in a one- or two-quart, wide-mouth jar, covered with filter paper lid, and kept under conditions described in App. ID until of test age. Some workers wrap the roll of wool strips in a 5″x15″ strip of wool felt to give it more support in the rearing jar.

(Note 5—No. 3 Special Filter Cloth from Mechanical Felt and Textiles Co., 50 W. 18th Street, Weehawken, New Jersey, and No. 70105 All-Wool Felt, Color 10 White, from The American Felt Co., 315 Fourth Avenue, New York, New York, have been used satisfactorily with the Heal type oviposition cage. Specific fabrics are to be used for rearing moths and must be free of insecticides.)

Appendix III. Procedure For Rearing and Handling the Furniture Carpet Beetle

A. Scope

The following procedure is to be used for rearing and handling the furniture carpet beetle, *Anthrenus flavipes* Lec.

B. Rearing Containers

(See App. IIB.)

C. Rearing Medium

(See App. IID.)

D. Insectary Conditions

(See App. ID.)

E. Maintenance of Cultures

1. Place 100-200 adult carpet beetles in a one-pint jar with several 3-inch squares of wool cloth supplemented with brewer's yeast. After one week remove wool cloth patches to rearing jar (App. IB) and replace dead adult beetles.

2. Examine culture jars at weekly intervals and add wool cloth supplemented with dry brewer's yeast sufficient to maintain an adequate food supply.

3. Test larvae are obtained from cultures during the sixth week after removal of the eggs from the oviposition jar. Larvae are easily transferred with light forceps from the wool cloth in the rearing jar to the test cage.

4. Remove pupae from the older cultures to a one-pint jar provided with a few pieces of wool cloth. Adults emerge within a week and this jar serves as a source of supply of adults for the oviposition jars.

5. The larval period is 10-13 weeks and the entire life cycle is completed in 12-15 weeks. These cultures are easily maintained for a constant source of uniform test larvae.

Addendum

It should be noted that in this test method the criteria for determining the acceptability or unacceptability of a mothproofing treatment are limited to the strictly quantitative excrement weight and fabric weight loss measurements. Although visible damage ratings can be used under certain conditions, they are not suitable for a standard method which must necessarily be used under a wide range of conditions; e.g., visible damage ratings would not give reliable results when (1) more than one type of material is involved, and (2) when comparing the results of different investigators.

Mothproofing treatments submitted to the U.S. Department of Agriculture's Pesticide Regulation Section for acceptance of label claims are subjected to a variety of tests, depending on the type of formulation proposed and the type of moth protection to be obtained. Usually a forced feeding test (similar to the CSMA Textile Resistance Test) is included and treatments are considered satisfactory if they do not show visible damage. Those treatments that do show visible damage in this forced feeding test are subjected to a long-term room exposure test. Lack of visible damage in this semi-practical test is the final criterion of the acceptability of the treatment.

Laboratories using the CSMA Textile Resistance Test with the intention of submitting results to the Pesticide Regulation Section are cautioned to take notes on visible damage. Reports on visible damage may be requested in addition to the reports on excrement weight and fabric weight loss.

Discussions with the Pesticide Regulation Section as to the detailed requirements for testing are always desirable.

Selected References

1. Anon., 1952. CSMA Textile Resistance Test. Tentative Methods of Test for Resistance of Textiles to Insect Pests of the Chemical Specialties Manufacturers Association. *Soap and Sanit. Chem.* 1952 Bluebook, pp. 259-262, 276.
2. Anon., 1957. Tentative Specification for the Larval Testing of Mothproofed Wool Serge. International Wool Textile Organization. Tentative standard method of test and assessment for proofness of wool serge against the common (webbing) clothes moth, *Tineola bisselliella* (Hum.). *Jour. Soc. Dyers & Colourists*, Vol. 73, No. 4, pp. 161-165.
3. Campau, E. J., 1951. Report of the Insecticide Scientific Committee. CSMA Proceedings, Dec., 1951, pp. 78-79.
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6. Haynes, H. L., 1958. Report of The Insecticide Scientific Committee. CSMA Proceedings, Dec., 1958, pp. — —.
7. Haynes, H. L., and H. O. Schroeder. Minutes of The Insecticide Scientific Committee, Dec. 3, 1956. Following cooperative tests, Geigy strain of black carpet beetles was adopted as official CSMA strain.
8. Heal, R. E., 1942. Evaluating protection of fabrics from clothes moth

(*Turn to Page 277*)



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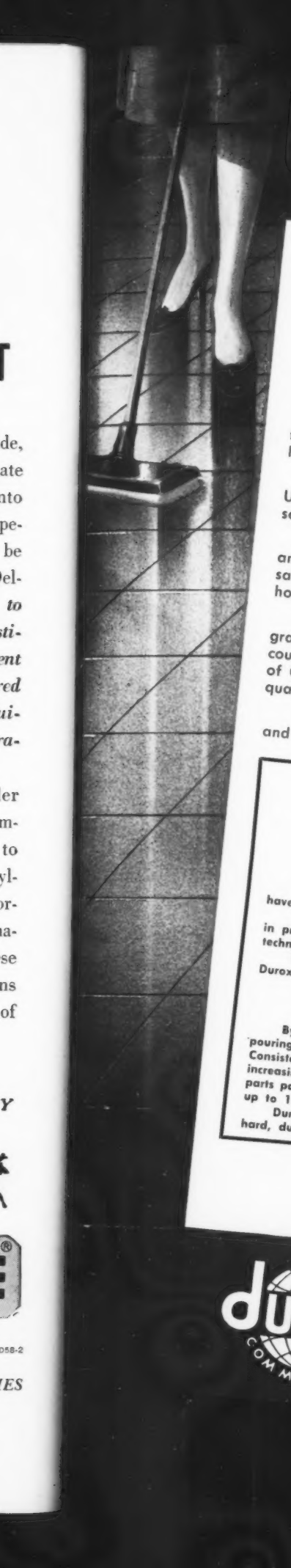
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Pressure—viscosity—time factors in

Dispensing of Liquid Aerosols

By Francis A. Mina, Ph.D.*
Lodes Aerosol Consultants, Inc.
New York City

THE main purpose of this presentation is to make available in a single reference source data relative to pressure, viscosity and time as they pertain to the dispensing of liquid aerosols. It is hoped that this data will facilitate preparation of samples for the usual laboratory testing procedures which precede the marketing of aerosols in which dispensing characteristics are affected by viscosity of product.

Viscosity has always been an important consideration in the preparation of aerosol products. Shave creams, paints, lacquers, skin and hair lotions usually require particularly careful viscosity control. Indeed, until recently a number of product types were found impractical for formulation into commercial aerosol products, due to their relatively high or variable viscosities, peculiar solubilizing characteristics for propellants and limitations in packaging components.

With the newer technology in aerosol packaging components and judicious use of propellants including compressed gases and fluorocarbons, we have seen in the past few months the introduction of aerosol products covering a rather wide range in viscosities; for example, approximately 2500 centistokes for a vitamin product to 60 to 65 thousand centistokes for aerosol toothpaste.

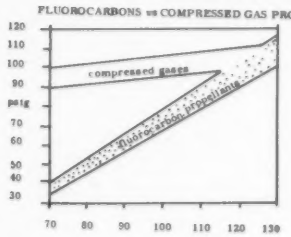
In the present work, we have attempted to demonstrate the relationship between the contained pressure, viscosity of product base and the dispensing rate of an aerosol product.

*Paper presented at the 45th annual meeting of Chemical Specialties Manufacturers Ass'n, New York, Dec. 10, 1958.

FIGURE 1

PRESSURE-TEMPERATURE RELATIONSHIP

FLUOROCARBONS vs COMPRESSED GAS PROPELLANTS



Materials & Components

Test Product: The test product utilized in these experiments was dimethylpolysiloxane in various viscosities ranging from 50 centistokes to 60,000 centistokes.

Dimethylpolysiloxane is a dimethyl silicone oil which is inert under a relatively wide range of test conditions. In addition to its stability, it was selected as the product base because of its ready availability in various viscosities. Densities of the Silicone L-45 series used in these tests are shown in Table I.

Pressurant: Fluorocarbon propellants are the most generally used source for pressurizing aerosols, although compressed gases, and to a lesser degree hydrocarbons, now are being used more widely than in the past.

The pressure-temperature relationship of fluorocarbons and compressed gases in the ranges most generally used in aerosols is shown in Figure 1.

While the pressure of compressed gas in aerosols is much higer initially at 70°F. than that of the fluorocarbon propellants, due to the more gradual increase in pressure, the compressed gas aerosols generally do not exceed the pressures of fluorocarbon propelled units at elevated temperatures.

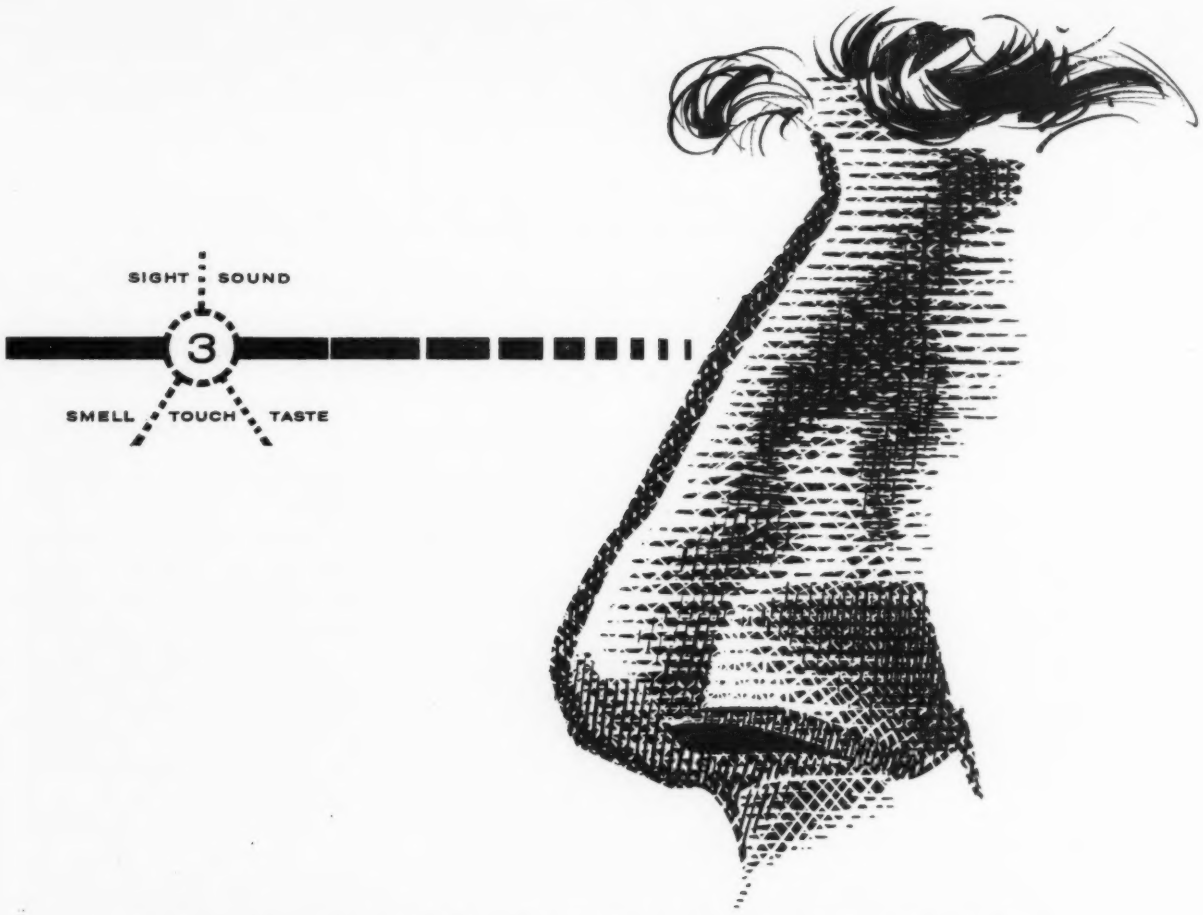
For the immediate purpose of this investigation, nitrogen was used as the sole source of pressure. The selection of this particular compressed gas was based on its relative non-solubility in the test fluids used, inertness, and other factors.[1] Other compressed gases and fluorocarbons were found to be too soluble in the test fluids to be used for the purpose of this work.

Product delivery valves: All valves used for product delivery determinations were obtained from the manufacturer from a single batch in order to minimize as much as possible any error due to varia-

[1]Mina, F.A., Nitrogen Aerosols, *Drug & Cos. Ind., 82:* 321 (1958)

Table I. Dimethylpolysiloxane Silicone Oils L-45

Viscosity (cstks)	Density (25° C)
50	0.960
100	0.970
350	0.972
500	0.973
1,000	0.973
30,000	0.973
60,000	0.973



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tion in allowable tolerances in manufacturing specifications. Valves used in these tests were made of nylon having three .040 inch orifices in the stem.

Test container: Specially constructed side seam aerosol containers were prepared having standard one-inch valve cup opening dome tops affixed to both top and bottom of a 12 ounce size container body.

Inlet pressure seal: this component consisted of an Imperial "Tappa Can" needle valve and threaded closure blank into which was staked an open aerosol valve housing with attached dip tube.

This arrangement allowed free and continuous access of pressure directly into the container head space without bubbling through the test medium.

Test Methods

The special "twin top" containers were fitted with a pressure intake valve assembly clinched firmly on the lower dome top. This component was attached by flexible hose to a compressed gas regulator having five pound sub-divisions and connected to a cylinder of pure OP nitrogen.

The container was then placed on a specially constructed rack or secured in a ring stand. Eight ounces of the test silicone fluid were then added and the product delivery valve secured by means of a Builders split ring and clamp seal.*

Figure 2

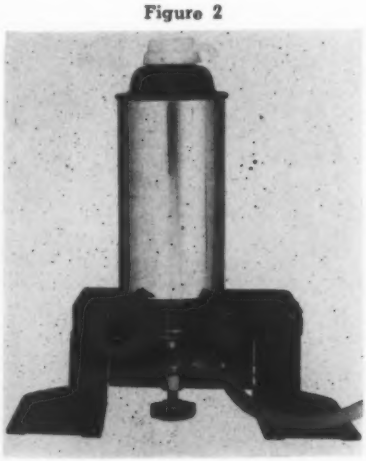


Table 2. Product Delivery Rate

	Av. gms/second Viscosity (Centistokes)							
PSIG	50	100	350	500	1,000	10,000	30,000	60,000
10	5.5	4.6	1.0	0.9	0.4	0.028	0.025	0.015
20	8.8	7.0	2.1	1.7	0.8	0.080	0.030	0.020
30	11.7	9.0	2.8	2.6	1.2	0.11	0.050	.021
40	16.3	11.3	4.2	3.2	1.8	0.17	0.06	.027
50	16.6	13.1	5.3	3.7	2.2	0.20	0.08	.035
60	18.6	14.2	6.5	4.6	2.4	0.24	0.09	.044
70	20.9	14.8	7.5	5.1	2.6	0.25	0.10	.050
80	21.1	16.9	8.6	5.8	3.2	0.31	0.12	.057
90	24.9	20.3	10.5	6.5	3.4	0.34	0.13	.064
100	26.2	21.4	11.0	7.4	3.7	0.37	0.14	.077

This procedure allowed the same container to be used repeatedly. However, when time did not permit cleaning and drying of the container, a different unit was utilized for each viscosity level in order to prevent diluting of the test fluid by residual silicone oil from previous tests. Figure 2 shows the complete test unit.

The rate of product delivery initially was measured by volume and by weight. However, the latter method proved to be more accurate and rapid particularly at the higher viscosity levels.

The initial quantity of test fluid was discarded after each loading to insure that the delivery tube and valve was completely filled with fluid and free of air bubbles. A minimum of three readings were made for each viscosity fluid at each pressure level.

The rate of delivery was determined by actuating the valve fully for periods of from 3 to 20 seconds. The fluid was dispensed directly into a tared bottle and the total weight per unit time recorded. The results reported in the tables herein are based on calculated grams of product delivered per second.

All tests were carried out at room temperature of 72° to 74°F.

Results:

Utilizing the procedures described above, we have found, as anticipated, an almost direct interrelationship between the extant pressure, viscosity of product and product delivery rate.

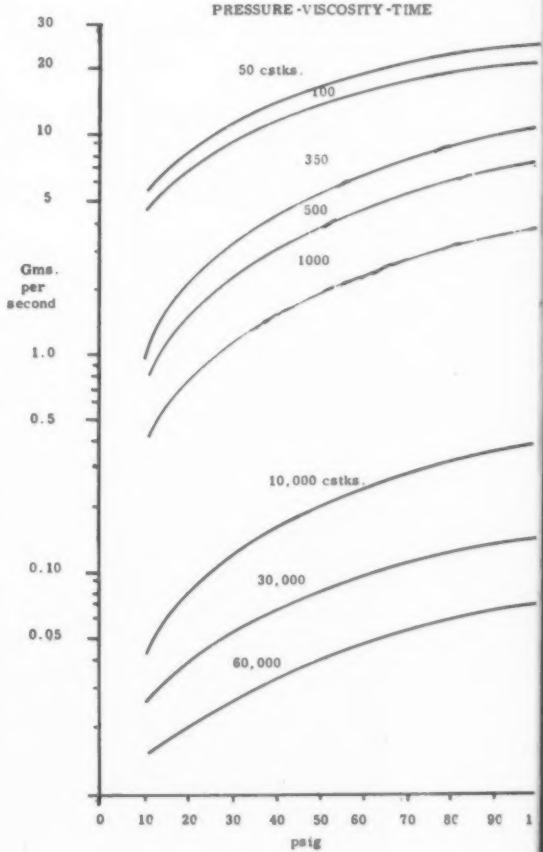
The rates of product delivery for the various viscosities of test product are presented in Table 2. Figure 3 shows a graphic presentation of these data.

The figures are reported as the average weight in grams of product dispensed per second.

(*Turn to Page* 129)

FIGURE 3

PRESSURE-VISCOSITY-TIME



*Builders Products, 108 Wooster Street, New York 12, New York.

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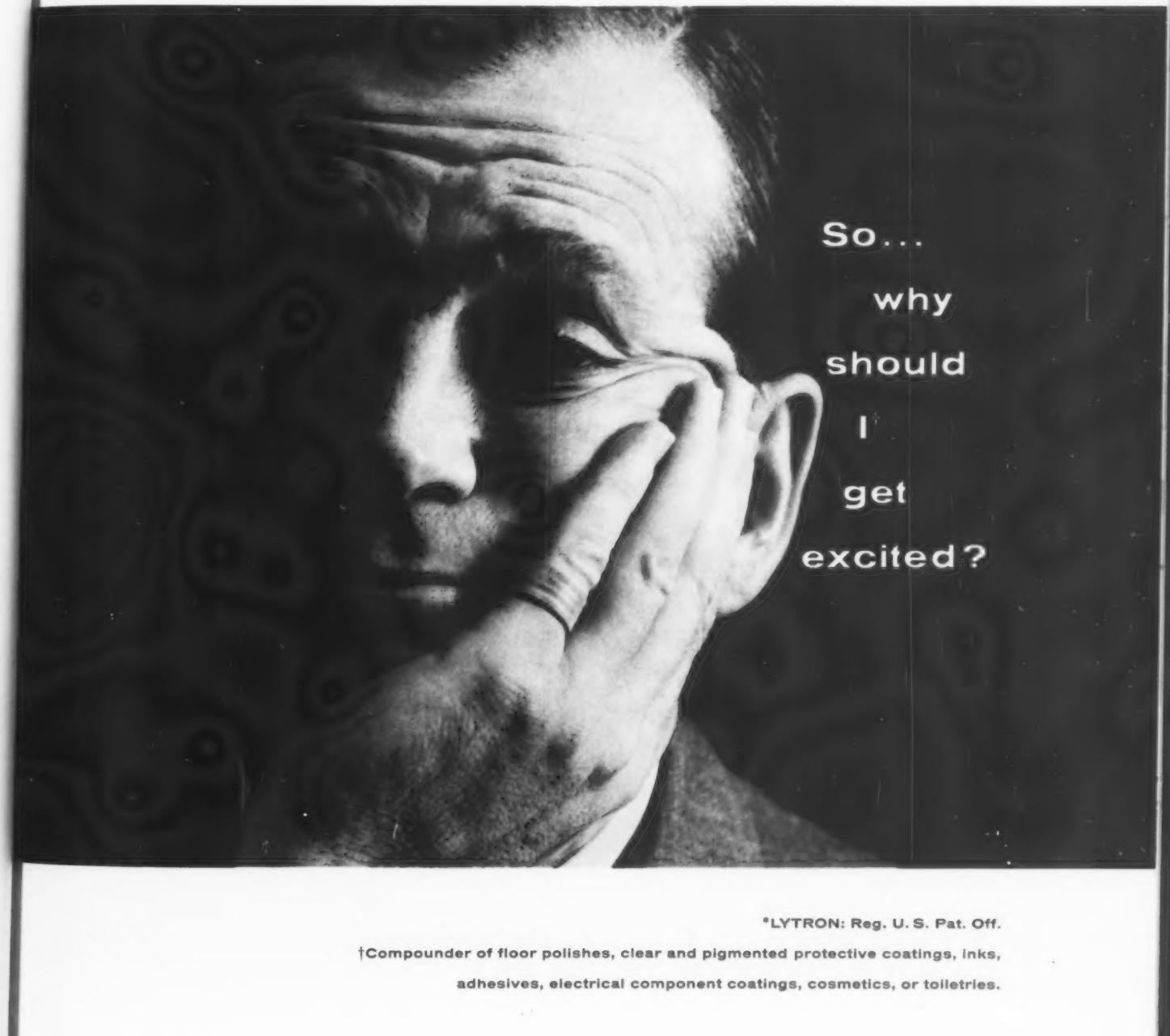
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A polyelectrolyte resin, free-flowing, powdered carboxyl containing styrene copolymer.

PHYSICAL CONSTANTS		
Total Solids:		100%
Specific Gravity:		1.14–1.16
Dielectric Constant:		3.29 } at 1 mc
Dissipation Factor:		0.02991 } at 1 mc
Acid Number:	approx.	190
Equivalent Weight:	approx.	295
Stability of Solid Resin:		No change on storage under normal conditions.

SOLUBILITY	
Soluble in:	ammonia
ethyl acetate	xylol/butanol
acetone	
methyl ethyl ketone	**Insoluble in:**
II-B alcohol	hexane
alkalies	toluene

good for what?

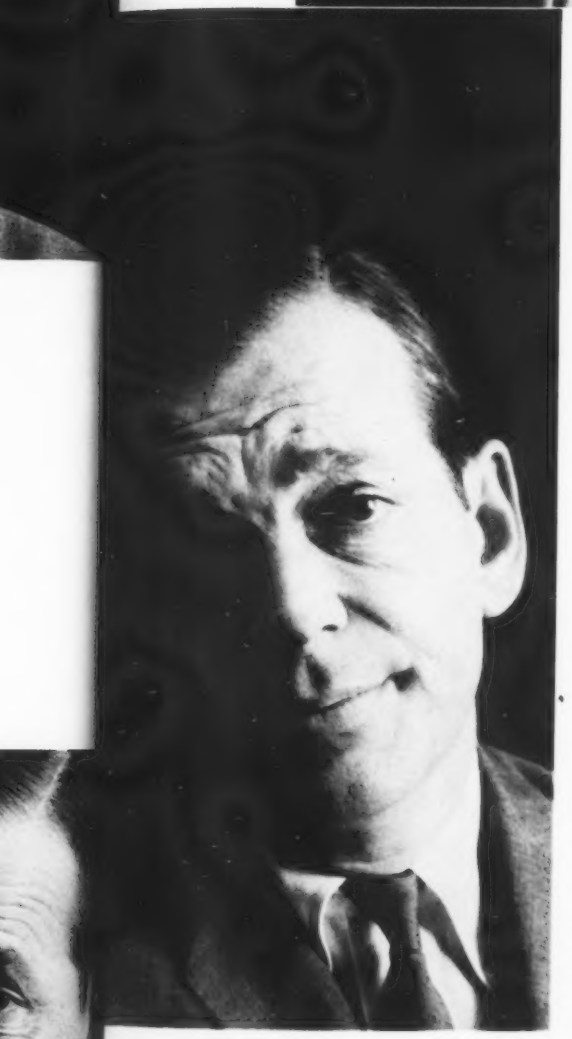


Lytron 822 Resin is recommended for use as a protective colloid, film forming vehicle, dispersing agent, pigment binder, emulsifier. It can also be a reactive component in water and organic soluble thermosetting coatings. Excellent in combination with starch and dextrin for adhesives.



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Note: LYTRON 822 has exhibited considerable promise as the alkali soluble resin in self polishing resin emulsion and wax emulsion floor dressings. LYTRON 822 is easy to compound, compatible with currently favored constituents in floor polishes and contributes to the stability and good color of the emulsion. When used with other constituents like polystyrene latex and polyethylene wax, the formulator can prepare a polish based entirely on uniform synthetic materials. These polishes perform as well as polishes based on natural resins—but with improved color and stability of supply and price of the raw materials.

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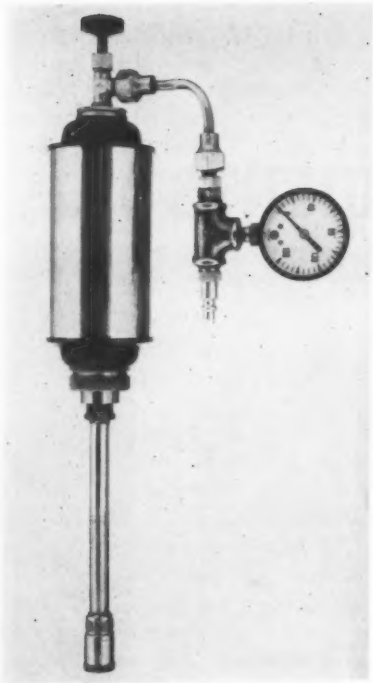


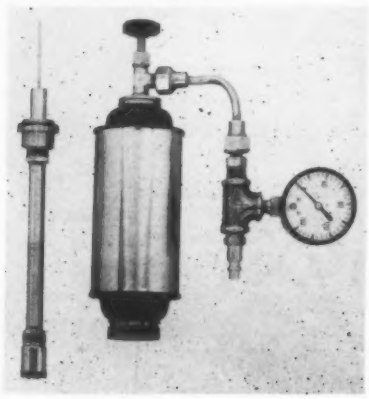
Figure 4

As shown in these data there is a proportionate decrease in delivery rate as the product viscosity increases, or conversely, the rate of product delivery is proportional to the internal pressure exerted on the system.

In view of the fact that some variations from the theoretical valves were found during this investigation, it was thought advisable to determine whether the viscosity of a given test fluid was affected by change in pressure. This phase of experiment was suggested by a review of a paper read before C.S.M.A. last May by Leighton, "Instrumentation for the Aerosol Industry," in which he described the use of an "Ultra-Viscoson" instrument for measuring the viscosities of aerosol products under pressure.

A test sample of silicone oil was submitted to this procedure by means of a special adapter to accommodate the "Ultra-Viscoson" probe to the twin-top container. This arrangement is shown in Figure 4. Details of the probe and adapter are shown in Figure 5.

Figure 5



Viscosity measurements were made at ambient pressure and at increments of ten pounds from ten to 100 p.s.i.g. and down again to ambient. Results were recorded automatically on a continuous feed recording unit (Figure 6). The viscosity of the test solutions is computed electronically and automatically recorded in centipoise x grams per ml.

Viscosity in centistokes is calculated according to the formula

$$\text{Cstks.} = \frac{\text{Instrument reading}}{(\text{Density})^2}$$

The sample used for this test was a commercially available silicone oil having a stated viscosity of 500 cstks. The effect of pressure on the test fluid is shown in Table 3.

As seen in this table the viscosity is significantly lowered as the pressure is increased and this phenomenon is reversible upon removal of the added pressure.

In order to rule out mechanical or electronic disturbances as possible causes, the experiment was repeated using an air "blank," omitting the test fluid.



Figure 6

The blank control showed a variation of less than a 0.1 per cent spread, thus indicating that the changes in viscosity of the test fluid were affected by the added pressure.

As to the cause of this effect, there are several possibilities. One suggestion might be a change in the molecular arrangement of the fluid under the increased pressure. Another possibility is that the compressed gas solubility in the fluid is sufficient to cause the decrease in viscosity.

We believe that this phenomenon is of sufficient importance in evaluating viscous aerosol products to require a more detailed study and we expect to report the results at a later date.

In the practical utilization of these data, limitations should be kept in mind imposed by allowable pressure in the aerosol con-

Table 3. Pressure Effect on Viscosity of Silicone Oil Test Fluid

Pressure (p.s.i.g.)	Pressure Increase Instrument Reading	Cstks.	Pressure Decrease Instrument Reading	Cstks.
Ambient	496	525	498	527
10	480	508	490	519
20	470	497	482	510
30	450	483	—	—
40	450	477	462	489
50	450	477	460	487
60	450	477	459	486
70	—	—	458	485
80	448	475	447	474
90	447	474	448	475
100	447	474	447	474

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tainer, minimum pressure necessary to disperse a given product at a desired delivery rate, and the extent of propellant solubility in the product base. The latter factor, of course, is important in considering the characteristics of the product on dispensing.

Extent of propellant miscibility can be estimated readily by use of a graduated Fischer-Porter tube (Figure 7).

Assuming that a preparation is being considered for marketing and the viscosity is unknown, and preliminary tests indicate there is no solubilization of propellant in the base, then with any given valve, a simple determination of product delivery rate is made arbitrarily, say at 60 p.s.i.g.

Let us say the product delivery rate is estimated at five gms per second which will produce a curve somewhere between the 350 and 500 cstks. viscosity curves (Figure 8). It should be noted that this is not to say that the test preparation necessarily has a viscosity of between 350 and 500 cstks., but rather that its dispensing rate with the particular valve being used should follow closely between these two curves.

Assuming further that the minimum desired rate of delivery for that particular product per second is four grams, then we see that the residual pressure (that pressure remaining in the aerosol unit after all of the product has been dispensed) should not be less than 50 p.s.i.g.

In view of the limitation on interior pressure of 100 p.s.i.g. at 70°F. for compressed gases, a head space of 50 per cent is required in order to retain the minimal dispensing pressure.

If it is practical to use a fluorocarbon propellant, the propellant may be selected as a blend producing the desired gauge pressure with minimal head space requirements because of the advantageous liquified characteristics of these propellants.

In the event that any significant portion of the propellant

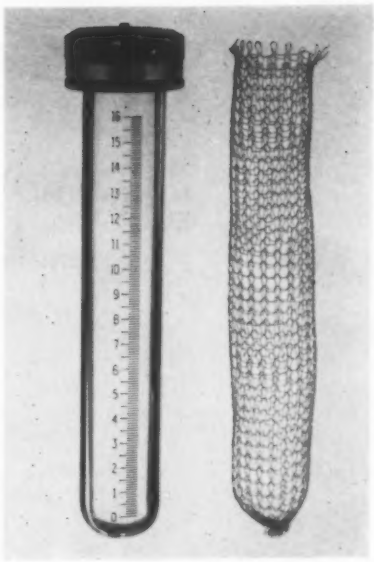


Figure 7

is soluble in the product base, the amount of propellant has to be increased to compensate for the amount dissolved in the base.

Summary

1. We have reviewed the inter-relationship between pressure, product viscosity and rate of delivery in aerosol liquids.

2. A suggested procedure is described for estimating the rate of product delivery with a given valve under varying pressures.

3. The procedure can be utilized also to help in the selection of a suitable valve for a particular test product, suggest changes in product viscosity for optimal delivery rate, and to determine optimal internal pressure requirements.

4. Evidence is presented indicating that the viscosity of the test fluid is decreased in proportion to an increase in gauge pressure.

The author should like to acknowledge his indebtedness to St. John's University College of Pharmacy, Continental Can Company, Precision Valve Corporation, and Union Carbide Chemicals Company Propellant Laboratories for their cooperation in certain phases of this investigation.★★

—★—

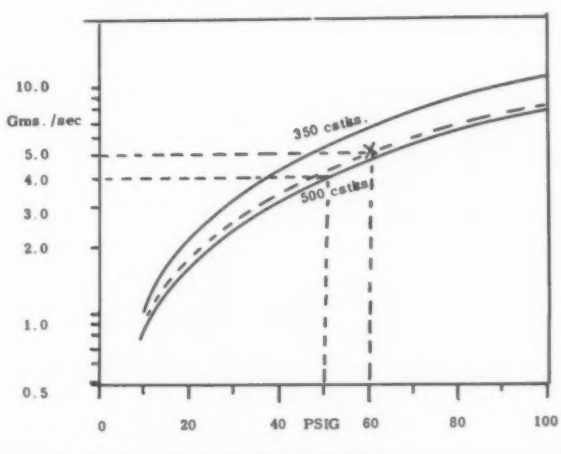
Allied Names Koblish

The appointment of Merle F. Koblish as sales manager for basic industrial chemicals produced by the General Chemicals Division of Allied Chemical Corp., New York, was announced recently by Vincent W. Suellau, vice-president. Mr. Koblish succeeds Arthur E. Foell, who retired late last year after 41 years with Allied.

Mr. Koblish was most recently assistant manager of sales. He has been with Allied for 30 years. In his new position he is responsible for the sale of such products as aluminum sulfate, phosphates, and silicates.

FIGURE 8

PRODUCT DELIVERY RATE-EXPERIMENTAL PRODUCT



MARKET STUDY REVEALS:

70% of the makers of liquid floor polish use polyethylene in their formulations



A market study just completed by Allied Chemical reveals that approximately 70 per cent of the manufacturers of liquid floor polish use polyethylene in their products today—a growth from less than one per cent three years ago.

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The rapid acceptance of polyethylene, which competes in the polish market with vegetable, mineral, and petroleum waxes, is attributable to the product's more stable price and the unique characteristics it imparts to the finished polish.

High gloss, nonslip, and long wearing are some of the consumer advantages cited by the study in accounting for polyethylene acceptance. Polish production advantages, an important area of discussion at the Chemical Specialties Manufacturers' Association meeting in New York, include broader pour temperatures and harder gels with increased solvent content.

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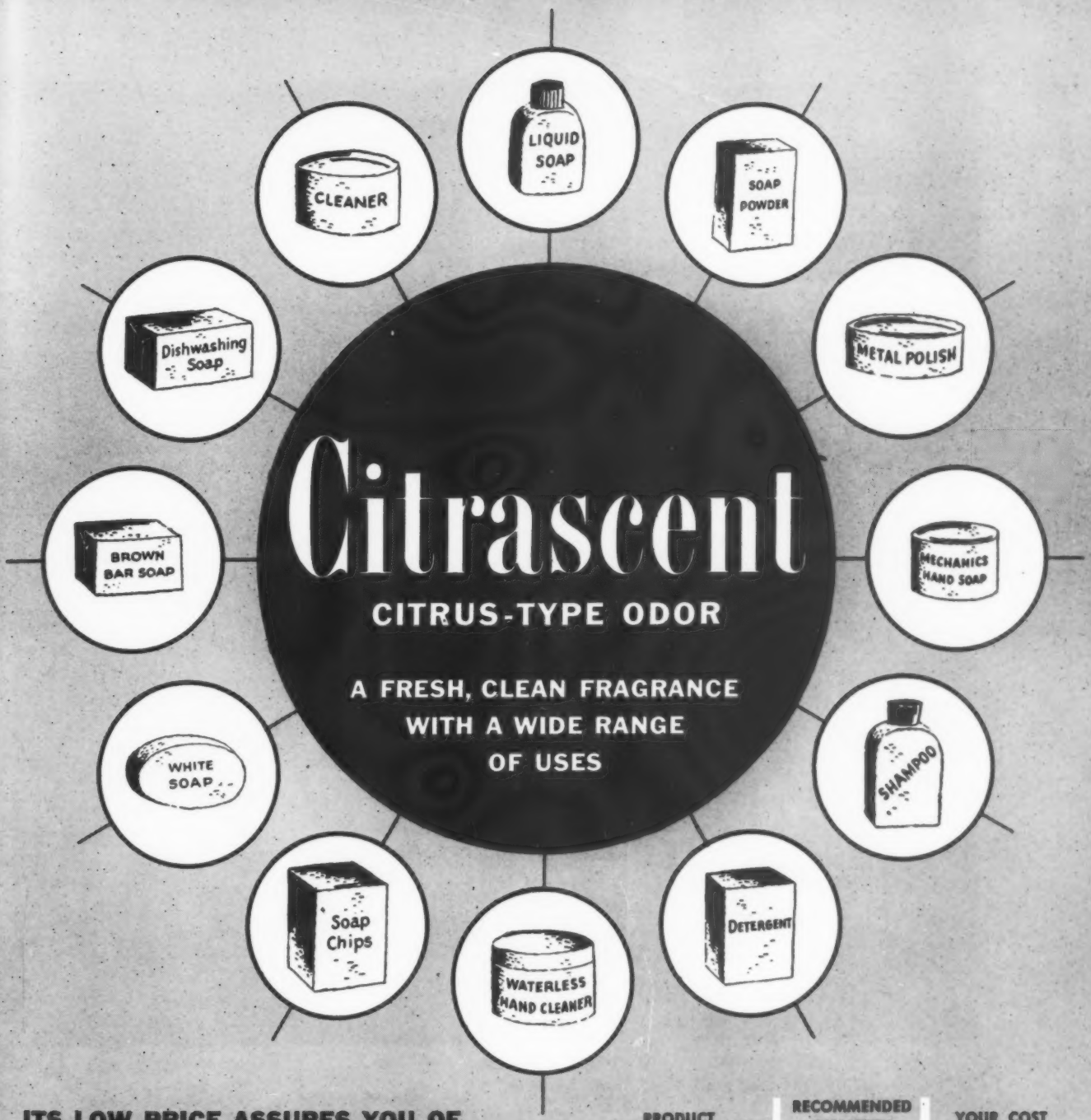
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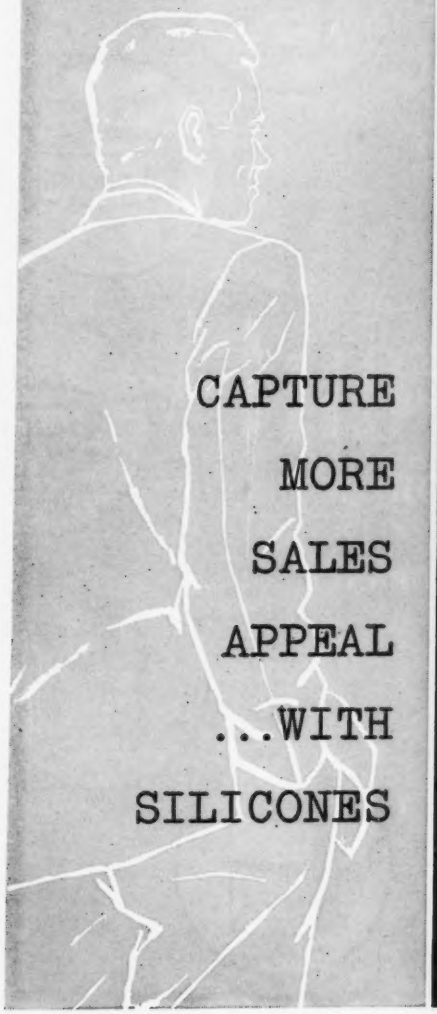
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Wide range of properties is available in floor finishes based on polymers. Formulator can create high wax content-polymer products that are buffable.

Photo courtesy Minnesota Mining & Mfg. Co.

Aqueous Floor Polishes

By L. M. Prince and J. Zevallos*,

Reichhold Chemicals, Inc.
White Plains, N. Y.

THE self-polishing floor wax industry was born in the late 1920's with the discovery that a carnauba wax emulsion, used in dressing leather would also impart a gloss to floor tile by the simple expedient of application. No rubbing or buffing was required as with the conventional paste type waxes. The first self-polishing floor wax was marketed under the trade name of "Dri-Brite."

The new water based floor products were at first challenged as being falsely represented as waxes. However, they marked the beginning of an industry doing today a 150 million dollar per year business. The market for polishes and the demand for improved products will grow even further with increasing populations and housing requirements.

Recently a trend has developed in the industry to replace natural waxes and resins with polymer emulsions. This change is largely rooted in economic considerations, both past and current. These will become obvious from an examination of the industry's history, which will also shed light upon the performance characteristics expected of the polymer latices.

Self-polishing waxes, dry-bright waxes, or "No Rubs," as Wilbert Products Co. tradenamed its product early in the game, owe their success to one single attribute of carnauba wax emulsions and their successors-small particle size. This is responsible not only for the spontaneous development of gloss but also for the remarkable stability of these emulsions. Stability made possible the performance of these waxes. Aging accompanied by increasing particle size would result in loss of gloss properties. Obviously the same particle dimensions are desirable in polymer latices and emulsions if they are to have similar attributes.

Carnauba wax emulsions

* Paper presented at first annual meeting, Canadian Manufacturers of Chemical Specialties, Montreal, Nov. 13, 1958.

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Shanco offers a series of alkali soluble resins for use as levelling agents in bright drying floor polishes. These resins all show excellent gloss and levelling properties. They vary in melting point to permit adjustment of film characteristics such as hardness and toughness of films. Any tendency toward powdering and flaking off may be overcome by the use of the proper levelling resin in the correct amount.

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exhibit particle diameters of 0.1-0.3 micron which accounts for their blue color. Dispersions of droplets having dimensions of this order exhibit a Tyndall effect to the naked eye. That is, particles having diameters measuring only a fraction of the wave length of white light, which is about 0.5 micron, scatter light which appears blue in reflected light and orange to red in transmitted light. Cigar and cigarette smoke appears blue for this reason. Scattering of sunlight by air molecules accounts for the blue color of the sky and the red colors of the sunset.

Droplets of carnauba wax in water are so finely dispersed that they absorb kinetic energy from collisions with water molecules. This causes Brownian Movement. As explained by Einstein and Smoluchowski, such particles cannot settle out in a gravitational field because of the ceaseless bombardment by the water molecules. Brownian Movement begins when particles drop below 0.5 micron in diameter. Emulsions in the particle size range below 0.2 micron, therefore, will possess permanent stability, providing no chemical reactions take place at the interface between the solid particles and the water, or in the dispersed phase itself. I have seen carnauba emulsions that were stable after ten years.

Because of this small particle size, carnauba wax emulsions reflect light from the floor in such a way that the deposited film appears to be continuous. The wax fills in the pores of the substrate, so that the surface which reflects light becomes smoother. In general, it has been demonstrated that, as the particle size decreases, gloss will increase. When particle size exceeds 0.3 micron, a matte finish results unless the film is buffed. Today's emulsions—both wax and polymer—range in size from 0.01 to 0.1 micron in particle diameter, with an average of about 0.05 micron. This has been substantiated by electron microscope studies.

Carnauba wax itself is an extraordinary material. Its success stemmed from an unusual combination of properties. These are hardness, high melting point, relatively high index of refraction, the ability to gel turpentine, mineral spirits and mineral oil to form paste waxes and the base for carbon paper inks, and finally its propensity to form colloidal emulsions. Even today, only a limited number of materials are known which qualify from the point of view of emulsifiability as substitutes for carnauba wax in emulsion polishes. Waxes like paraffin, microcrystalline, beeswax, Chinese insect wax and spermaceti are incapable of this kind of colloidal emulsification.

It was thought for many years that carnauba is an ester of myricyl alcohol and cerotic acid, and contains about 10 per cent of a high molecular weight paraffin. This information could not explain why carnauba wax emulsified. Carnauba's secret lies in the fact that it is 53 per cent hydroxy acid ester; in fact, the ubiquitousness of hydroxy acids characterizes carnauba, candelilla and ouricury waxes. The alcoholic hydroxyl group imparts to the waxes an amorphous structure, which is responsible for their conchoidal fracture as opposed to Chinese insect wax, which is chiefly ceryl cerotate, or spermaceti wax, which is chiefly cetyl palmitate, both of which are soft waxes possessing a characteristic needle-like crystalline structure. The hydroxy esters markedly improve the emulsifiable properties of straight esters and are also responsible for their gelling power in solvents.

Carnauba Formulations

The first carnauba wax emulsions marketed for self-polishing floor wax contained soap and carnauba wax alone. The soap was an oleic acid soap of potassium hydroxide and borax. Potassium hydroxide was used because potassium soap is more soluble in the wax phase than a sodium soap, emulsions are easier to make, and smaller particle sizes can be obtained. Later an amine soap, triethanolamine oleate, was used. The alkali metal soaps were very brittle in the early stages of inversion of the wax emulsion from a water-in-oil to an oil-in-water emulsion and presented problems at the transition stage. The amine soaps greatly faciliated the transition through the gel stage, and were used by several major comanies to get floor wax into mass production. Later morpholine, AMP and triethyl amine, were introduced. These soaps impart better water resistance to the film.

When the amines were introduced, manufacturers began to think about toughening the plasticized carnauba wax film. Shellac, cut in ammonia or borax, was found compatible with carnauba wax emulsions and to impart hardness, toughness and increased gloss to the films. About 10 to 20 per cent of these resin cuts were used with carnauba wax emulsions during this period. Later other alkali soluble resins came into use.

By the middle thirties carnauba emulsions were being produced by millions of gallons and the price of the natural wax had increased from 20 cents to 35 cents a pound. Brazil was being pressed to increase her production. In good years, it was possible to produce a maximum of about 22 million pounds for export. This limitation coupled with the fact that the quality of the wax varied from shipment to shipment, made it advisable for the wax manufacturer to seek sources of wax, other than carnauba. This was not easy because of the emulsification requirement.

Candelilla wax from Mexico, which was priced at 16 cents a pound in 1936, was certainly a likely candidate, because of its high melting point and conchoidal fracture, but it could not be emulsified. Rosin esters at 16 cents per pound were found, to be compatible with carnauba wax in certain proportions. Another material, a terpene

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phenolic, at 23 cents per pound entered the picture. A good grade of carnauba wax could be extended with as much as 50 per cent terpene phenolic without too deleterious effects upon dirt pick-up and general tackiness of the film. But films were darkened by this resin and smeared a little.

Problems of Supply

As war broke out in Europe in 1939, the Brazilians found another material, ouricury wax, which has properties quite similar to those of carnauba. Experimental shipments arrived in the United States in 1940, but the pressure of war and the expanding self-polishing floor wax market were steadily pushing up the price of waxes. About this time a way to emulsify candelilla was found. But by early 1941, it was selling for 75 cents a pound.

The war years saw no technological advances. The industry was completely occupied with the business of finding raw materials and the pressure of other war work. Immediately after the war, however, oxidized microcrystalline waxes were developed. When oxygen reacts with these long chain hydrocarbons in the presence of a catalyst, many chains undergo scission with the formation of shorter chain alcohols, acids, hydroxy acids, ketones and aldehydes. Further reaction esterifies some of the acids and alcohols. The resulting mixture emulsifies much as ouricury does.

This was one answer to the supply problem, but it brought other problems to manufacturers. Oxidized microcrystalline waxes were, in general, considerably softer than the hard carnauba; their color inferior. At this stage however enough know how had been accumulated to enable the formulator to blend shellac, carnauba, straight microcrystalline waxes, etc., into a satisfactory polish at reasonable raw materials cost.

The gloss of films cast from aqueous polishes was improved during the first decade of their manufacture by advances in leveling properties and by reducing the particle size in the emulsions. Shellac cut with ammonia, triethanolamine and borax brought marked improvements in gloss properties.



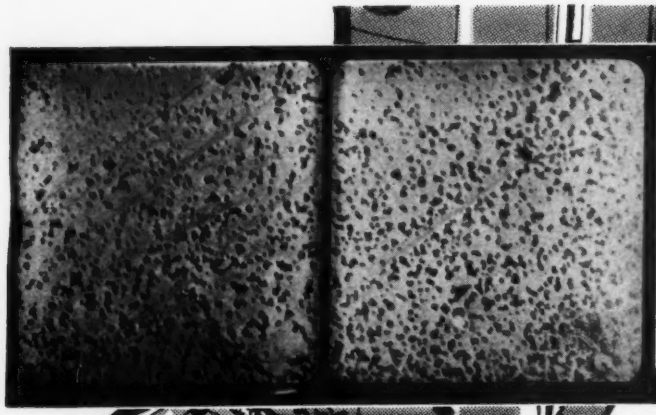
Correctly formulated aqueous floor polishes combine waterproof properties with high gloss, good color stability, and excellent wear and scuff resistance.
Photo courtesy Minnesota Mining & Mfg. Co.

When oxidized microcrystalline waxes first proved successful as ingredients of emulsion floor polishes new manufacturers entered the field. Later, Fischer-Tropsch waxes came out of Germany. These products of hydrogen and carbon monoxide competed at first with the straight microcrystalline waxes, and when they were oxidized, with the oxidized microcrystallines.

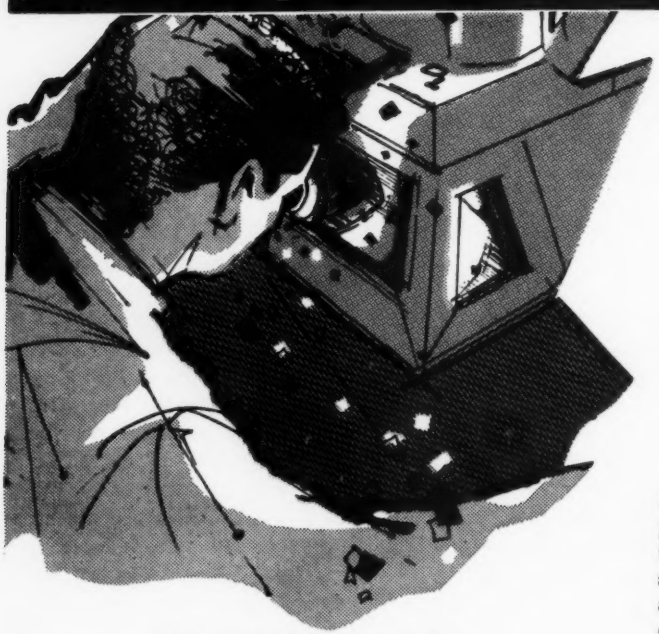
Later, polyethylene and especially the low molecular weight polymer proved competitive with microcrystalline and Fischer-Tropsch waxes and, when oxidized, it was found to compare favorably with oxidized microcrystalline waxes. These developments brought some reduction in the price of carnauba. Oxidized microcrystalline waxes sold for 35 to 50 cents per pound, depending upon grade. Oxidized polyethylene came on the market at 50 cents per pound and today is selling for about 40 cents.

None of these materials equals carnauba in all of its unique properties. Many of them emulsify equally well and have good gloss properties, but all lack carnauba's intrinsic hardness. Compounding with resins does not hold the answer to this problem. As a result the Brazilians were able to keep the carnauba prices relatively high. The carbon paper and paste wax formulators still need carnauba and there were many other specialty fields which had not been invaded by the emulsifiable carnauba substitutes. The introduction of sugar cane wax eased the carbon paper situation and eventually served to reduce sales of ouricury.

In the early 1950's, a new polish material emerged which surpassed all household polishes then on the market with respect to gloss. The new product was an 80 per cent shellac/20 per cent wax emulsion in which the shellac was cut with borax. At this time the price of shellac was about 35 cents per pound, well under the price of natural wax. In addition about 20 percent of the shellac cut contained borax which, at a nickel a pound, further decreased the raw material costs of the final product. But, as wax manufacturers began to use this formulation widely and the demand for shellac rose, so did its price. The ultimate solution to this problem was a completely synthetic



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material which would satisfy the specifications of the polish industry and which would be essentially independent of supply problems.

Advent of Polystyrene

One such material is polystyrene latex, introduced several years ago. The amount of polystyrene which could be used by the wax industry is a "drop in the bucket" compared with the amount consumed by the synthetic rubber industry, paint and other uses. Polystyrene is very hard, has a high index of refraction and is cheap; the monomer price is only 12-13 cents per pound in bulk. But polystyrene is not film forming.

This shortcoming was overcome by introducing plasticizers and by drastically modifying the chemical composition of the polymer. Particle size was reduced to 0.05 micron, but the chemical modification caused the polymer to change in color from pure white to amber. The liquid plasticizers which are employed as film formers are, in general, fugitive and as they leave the film by evaporation or by migration into the substrate, the polystyrene embrittles and powders off the floor. While satisfactory polishes can be made, very careful balancing of the formulas is required. Polystyrene based polishes do not work equally satisfactorily on all types of surfaces.

Moreover, because these formulas are very sensitive to the amount and kind of plasticizer used, they require a uniform grade of latex. By the very nature of polystyrene emulsions, this is difficult to achieve. Emulsion polymerization of styrene readily yields a very high molecular weight polymer. This high molecular weight material is less readily plasticized than low molecular weight products. Molecular weight can be controlled by various means—but, in many cases, a broad range of molecular weight distribution results and a sensible fraction is too high for easy plasticization. The resulting non-uniformity, presents a problem in floor polishes.

Polystyrene also degrades in the presence of ultra violet light. As a result, it discolors with aging on the floor.

Thus, while modified polystyrene emulsions show promise of replacing natural and synthetic waxes and resins, they are not the complete answer, although the price and supply picture is good. Difficulty with poor plasticization, poor color, dusting off and degradation in the presence of light remain serious deficiencies.

Another polymer which has been considered for use in floor polishes is vinyl acetate. The monomer cost is 17½ cents per pound and it is in excellent supply, being used extensively in the paint and adhesive industries. Vinyl acetate has been suspect for use in the polish industry because of the tendency of the ester groupings to hydrolyze, which, of course, is not the case with styrene, a hydrocarbon. In addition, vinyl acetate homopolymers have a pH below 7 and the emulsions have particles of a micron or more in diameter. A copolymer emulsion is available of particle size below 0.1 micron, as is a bead form of an alkali soluble copolymer. This latter can be ground up like shellac and dispersed in ammonia water.

Acrylic Emulsions

Emulsions of ethyl acrylate and methyl methacrylate copolymers however do not exhibit the shortcomings of either styrene or vinyl acetate polymers. Particle size can easily be brought to the range of 0.05 micron, the color is pure white and these emulsions form films much more readily than do polystyrene emulsions. They are quite stable to light. The molecular weight is lower and its distribution range is narrower. Poly methyl methacrylate does not hydrolyze and poly ethyl acrylate does so to only a slight degree. Extensive testing has demonstrated that these emulsions possess the stability required by the polish industry.

Acrylate latices at 50 cents per dry pound are priced only a few pennies higher on the average than the modified polystyrenes. Acrylics have two shortcomings. Being softer than polystyrene, they do not wear quite as well, and because their index of refraction is lower than polystyrene, they produce less gloss at equal solids. These disadvantages can be overcome by proper formulation.

A high degree of gloss, color and water spot resistance are imparted to floor polish formulations by incorporation of acrylic emulsions. Other benefits include excellent water spot resistance, coupled with ease of removal. Grades of acrylics are available that will deposit films which are waterproof while other grades can readily be removed from the floor with a mild detergent.

Acrylic based polishes tend to remain on the surface of the substrate. The polymer particles appear to coalesce and spread across the surface without penetrating into the pores of the linoleum or tile, as do wax particles. The result is that they present a more continuous film to incident light than do the small particle carnauba wax emulsions. This also increases the thickness of the protective films and is responsible for the high gloss and "jetness" of acrylic films.

Wax emulsions such as carnauba, oxidized microcrystalline, oxidized Fischer Tropsch or oxidized polyethylene are employed with the polymer emulsions to give varying properties to the final polish. The oxidized polyethylenes contribute self-healing properties. About 15 per cent of these with 70 per cent acrylic by volume impart good scuff resistance to the films. Higher percentages of waxes yield buffable finishes. Acrylics, because of their ester structure, appear to be quite compatible with these wax emulsions and additionally can, in some formulations, be used in minor proportions to improve the performance and compatibility characteristics of

(*Turn to Page* 269)



Prelude to 8:45 a.m.

Now there's no clack of typewriters, no click of heels. But 8:45 a.m. comes early.

With it will come the traffic. Vice president's measured plod . . . secretary's tap-tap-tap . . . office boy's frantic gallop. A loaded dolly rumbling to the stock room. Hurry, hurry —pound, scuff, scrape—until 5 p.m.

Will this floor polish take it?

Yes.

The *real* prelude to 8:45 a.m. began months ago, when a chemist started swabbing 63 different polishes on squares of the same kind of floor tile you see above.

Somehow, as happens often, a Durez man was in the picture, too.

Drawing on 20 years of wax-emulsion experience, he provided the chemist with sample resins to add gloss, hardness, water resistance, slip resistance, stability.

Then he suggested ways of *getting the most out of the resin,* for a balanced blend of these properties.

When the polish was ready to market, the manufacturer knew it was right. It had the best blend of properties available for this type of flooring, at the price he was asking.

Are you researching a new polish? Your selection of *resin* can make a big difference in results.

More important still is the *experience* that goes into your choice of resins. There are no up-to-date textbooks on their application.

To tap this experience, ask us now for samples of Durez wax emulsion resins that may give your polish the qualities you want it to have.

If you prefer to buy fusions of resin and wax, you can get them, made with Durez resins, from many specialty processors. Ask us for their names.

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HOOKER CHEMICAL CORPORATION

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INSECT REPELLENTS . . .

What does U. S. public think about them?

THERE are 62 million U. S. adults who are potential buyers of insect repellents (the type applied to the skin), according to a nation-wide survey conducted by Hercules Powder Company through the facilities of the Gallup organization.

Personal interviews, by trained Gallup pollsters, were made in August of last year to determine the public's use and attitude toward personal insect repellents. The survey data were first shown to customers for Hercules' diethyl toluamide repellent, to demonstrate how the market might be broadened. From some of the comments made by those interviewed, new light was thrown upon the wording of consumer advertising and labels.

The study had three main objectives:

To estimate the proportion of U.S. adults who could be regular users

To find out what people expect a repellent to do for them

Learn from past users—who do not expect to continue using repellents—their reasons for not doing so.

In accordance with regularly established public opinion research techniques, the results of the nation-wide "sample" were correlated with the age, sex, occuption, income, and geographical location and projected to include the entire adult civilian population of 103 million.

Here are some of the highlights from the survey that define this broad and largely untapped market:

1. Most persons immediately associate use of repellents with *outdoor* activities. With ever-increasing interest in sports, fishing and camping, boating, even backyard barbecues, the recreational habits of the American people are helping to create a market.

2. Higher income groups, and persons up through their late 40's are the largest potential users.

3. There seems to be no difference in the man's attitude, compared with the woman's, toward these products.

4. The midwest, Far West and South, are larger market targets than the East.

5. The smaller the community (under 50,000 and down to 2,500 or fewer), the higher percentage of possible users. The obvious explanation is that city dwellers spend less time outdoors.

6. Most people expect a repellent to keep insects away, or at least to keep insects from biting them. But those who were dissatisfied with repellents, in many instances, felt the insects weren't kept *far enough away* from them.

Let's take a look at the negative side of the market, as reflected by the Hercules survey.

The first question asked was:

"Do you spent any time in outdoor areas where mosquitoes or biting flies are a problem?" This question "set the mood" of the interview and also immediately screened out those persons who aren't outdoors much — or some others who don't regard insects as a "problem" anyway. Forty per cent of those responding said 'No' to this question. That still leaves more than 60 million adults who can be regarded as the potential market.

Among those who said "Yes" to the first question, only slightly more than half of them have used an insect repellent. That means there are more than 25 million adults who should be using repellents because they spend time outdoors, but haven't done so yet.

Those who have used repellents, by and large, plan to continue. But one out of four said "No." This is the market that must be regained, while efforts are made toward winning new buyers.

Here are some of the reasons why former users of repellents say they don't plan to buy them again:

1. No insect problem—not necessary.

2. Didn't keep insects from biting.

3. Didn't protect long enough. These were the criticisms voiced most frequently. All other complaints accounted for less than one per cent of the answers, and covered a wide range of points: disagreeable odor, allergy fear, skin irritation, greasy feel. It is significant that no comments were recorded on price or availability.

Here are some randomly selected answers from these "lost" consumers:

"I think it evaporates too fast to do any good"

"I come in away from bugs. It's not worth the trouble"

"I'd rather spray the area"

"It leaves an oily film"

"It's dangerous for children"

"I never gave it any thought"

The biggest reason, as might be expected, was that there wasn't any problem with mosquitoes. And others said they didn't think the

(*Turn to Page* 145)

Detergent Intermediates

(*From Page* 59

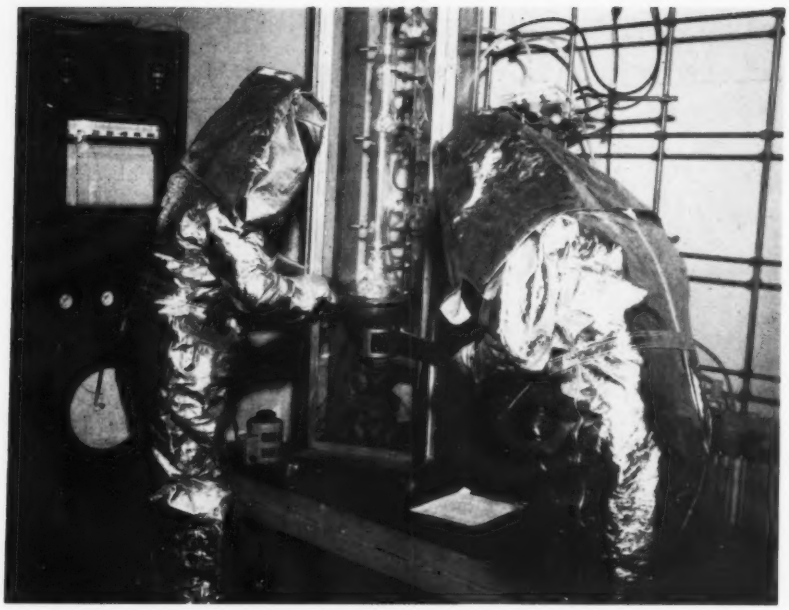
types or even broader ones containing both lower and higher members of the series should be somewhat more economical. On the other hand, very close cuts of essentially one individual alcohol may be obtained by close fraction – if required. This flexibility makes it possible to tailor-make for the consumer the specific composition needed to provide the right balance of properties desired in his finished products or formulations.

We believe that the principal attractive features of the "Alfol" development to consumers will be:

1. The availability to the detergent industry of a new source of raw materials which will meet a wide variety of requirements for new and improved products.

2. The ready availability of well established and stable raw materials assures a reliable source of supply.

3. The economics are believed to be such that these alcohols may be offered at competitive price levels for large volume established markets as well as other volume markets for which similar products heretofore have been unable to compete for economic reasons.

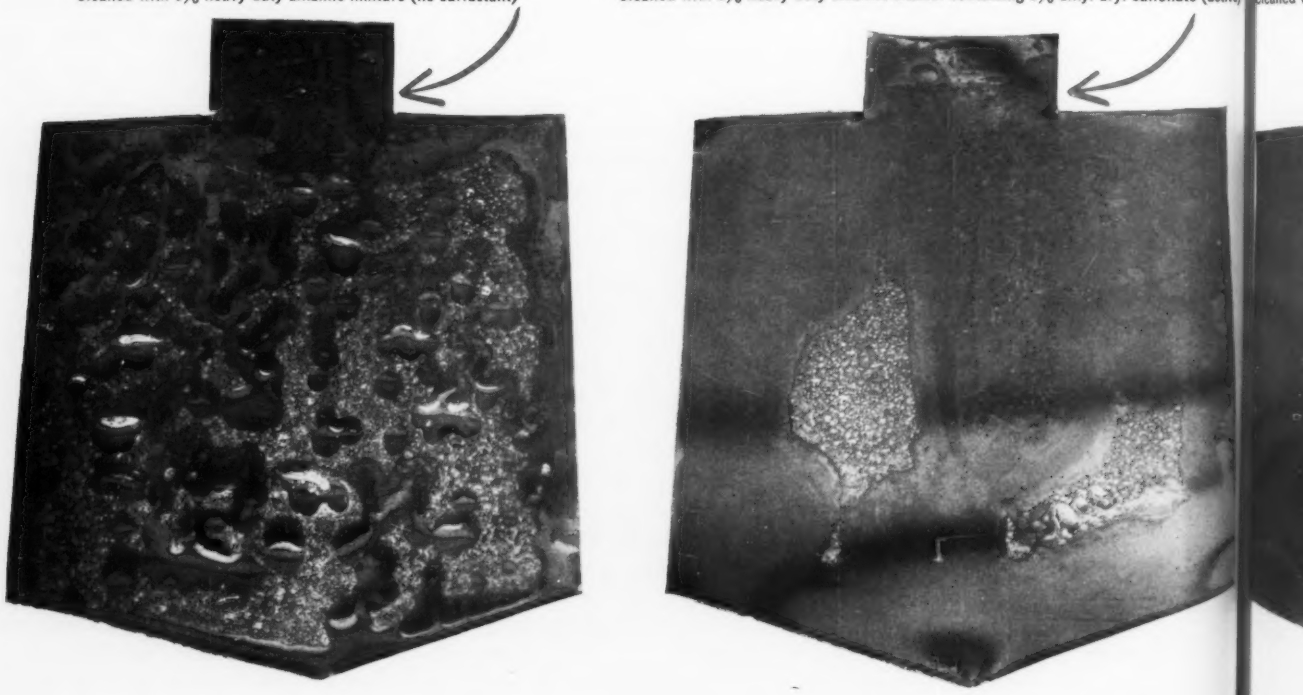


Metal alkyl catalyst sampling at the plant of Continental Oil Co., in Houston, Tex.

New Detergent Speeds Metal Cleaning..

Cleaned with 5% heavy duty alkaline mixture (no surfactant)

Cleaned with 5% heavy duty alkaline cleaner containing 5% alkyl aryl sulfonate (active)



In closing, I would like to outline briefly the current status and future plans for "Alfol" alcohols. Piloting is well on the way to completion, and the definitive commercial scale plant design will be finished shortly. The present schedule calls for this plant to be completed and ready for operation by 1961.★★



Front view of Continental Oil Co's research and development pilot plant.

Insect Repellents

(*From Page* 144)

repellent they had used was effective.

Basically, the non-users seem to fall into groups:

1. The "disillusioned"
   They tried one and it didn't work. Some of these replies came from men who had last tried a repellent during the World War II.
2. Those who are bothered by insects
   They either expect insects and aren't too bothered, or they avoid areas where insects are active.
3. Those who have physical or psychological objections
   The smell, the feel, the fear of skin irritation.

And, finally, of course, among users and non-users alike, there is the feeling that repellents are used only on special occasions—vacation trips, rather than for everyday application on the porch and in the garden.

How about the bright side of the picture? Hercules found ample evidence among satisfied users to be optimistic. Nearly half of those who said they had used repellents reported they had used them "this year, this summer"

TRITON QS-15

Cleaned with 5% heavy duty alkaline cleaner containing 5% Triton QS-15 (active)



In controlled laboratory tests, mild steel panels coated with mineral oil (Bright stock) were rotated in detergent solutions for 5 minutes at 85° C.; rinsed in cold water and drained for 20 seconds. Residual oil was observed after spraying panels lightly with cold water.

TRITON QS-15 improves the cleaning effectiveness of alkaline baths because of its excellent detergency, solubility and stability in alkali solutions—including caustic. Our tests established these important advantages for TRITON QS-15 over alkyl aryl sulfonates: At equal active concentration TRITON QS-15 cleans three to four times faster; in cleaning cycles of equal duration it takes one-half to two-thirds less TRITON QS-15.

Improve your heavy duty alkaline cleaner formulations with TRITON QS-15. It is suggested for the cleaning of metals, bottles, food and meat processing equipment, and for any application where faster, better cleaning with alkaline solutions is important. Write for TRITON QS-15 Bulletin, San-202.

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(1958). It's important to remember that the Gallup survey is made on a nation-wide sample and therefore these interviews were in no way connected with resort areas or other localities where the sale of insect repellents probably is proportionately higher.

As the 1959 season gets into full swing, repellent manufacturers may well keep some of these findings in mind while analyzing their sales in what promises to be a fast-growing industry.★★

Detergents in Sewage

(*From Page* 63)

have been related to frothing which occurs during sewage treatment. Investigations to acquire basic knowledge on factors that cause frothing in sewage plants, including the effect of ABS, have been going on in the project established at the University of Wisconsin under the direction of Professor G. A. Rohlich and Dr. L. B. Polkowski.

This work has established that while ABS can contribute to foaming, many other factors independently or combined also are involved. Some of the other factors that have been found to increase frothing are low solids concentrations, temperatures above 72° F, high pH and particularly the presence of protein degradation products evidenced in sewage by increase in organic nitrogen. A mysterious observation was that frothing most often occurs in the early morning hours or at dusk; this could be associated with periods of low flow where, as previously observed, frothing also appears to increase although ABS concentrations at those times are frequently low. The type and rate of aeration also play a part. Differences in bubble size and rate of flow could account for cases already mentioned in previous reports where, in parallel aeration tanks fed with the same influent, frothing occurred in one but not in the other.

It is now more evident than had already been indicated in the early stages of this investigation that frothing in sewage plants is not due only to surface active materials stemming from synthetic detergents but to a combination of factors which, excluding the detergent, could potentially be as bothersome.

Aside from the factual material mentioned, the investigations at Wisconsin have developed useful laboratory techniques for evaluation of frothing and measurement of froth characteristics in terms of persistency of the bubble and life expectancy of the froth; these data will appear as a separate publication of scientific significance.

Ground Water Pollution

An area that has received relatively little attention but, because of increasing inquiries now calls for more thorough investigation, has to do with ground water supplies and their possible contamination by waste effluents containing detergents. It is pertinent that in all cases of pollution of



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ground water by detergent-bearing wastes that have come to the attention of members of the Research Steering Committee, inadequate municipal water and sewage facilities have existed. Most prevalent are situations where populated communities are dependent upon septic tanks or cesspools for sewage disposal and wells as sources of water. Often the wells are too close to the source of sewage effluent and not deep enough to comply with ordinary sanitary precautions. It should be apparent that concern over possible contamination by detergents is insignificant in contrast to the more serious potential health hazard of contamination of the water supply by sewage effluent.

To cope with this problem, a new ground water committee has been created and a project designed to investigate and study factors associated with this situation will in all likelihood be initiated during 1959.

Other Committee Activities

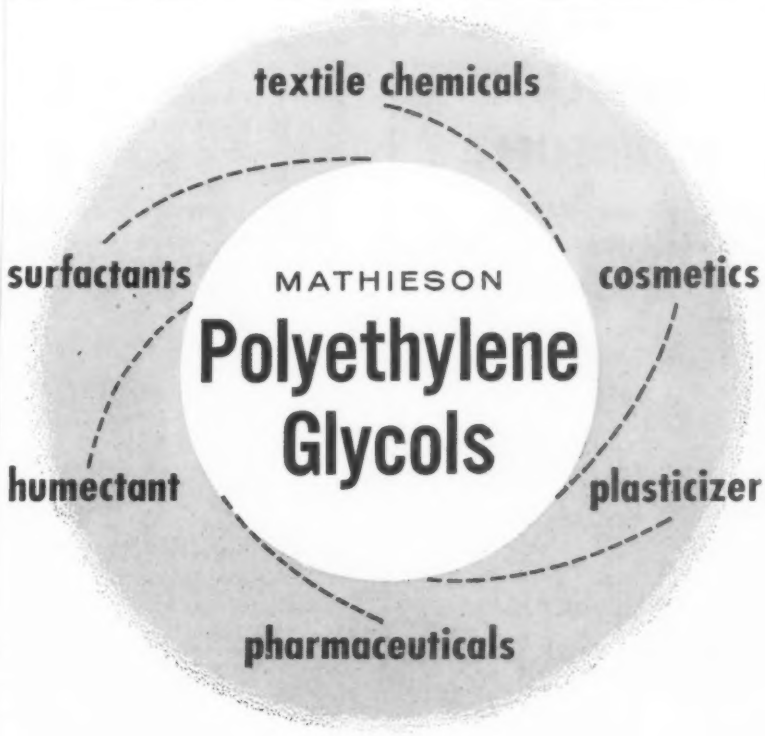
Much time has been expended on cooperation with other groups working to find answers to the questions before us. In addition to collaboration with the American Water Works Association and the Federation of Sewage and Industrial Wastes Association, mentioned elsewhere in this report, members of the Research Steering Committee continue to work with the following groups:

1) The U. S. Public Health Service through the Taft Sanitary Engineering Center and the National Technical Task Committee on Industrial Wastes.
2) The Ohio River Valley Water Sanitation Commission. Members of the Steering Committee also serve as members of this group's Chemical Industry Committee and its Water Users Committee.
3) The American Society for Testing Materials Committee on Water Analysis, Committee D-19, and especially its Task Group on Synthetic Surface Active Materials.
4) The British Government's "Standing Technical Committee on Synthetic Detergents."

Summary

In retrospect, the Research Steering Committee can look with satisfaction on the results of the research work that has been carried on since inception of this program. Specific findings that have contributed to clarification and ultimate resolution of questions that have been posed about detergents in sewage and water can be summarized briefly as follows:

1) Contrary to earlier beliefs, a large portion of the principal organic constituent of synthetic detergents (ABS) is degraded in conventional secondary sewage treatment and means of attaining still higher degrees of degradation in existing or modified



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sewage treating plants have been uncovered and are being explored further.

2) Levels of ABS that exist or may exist in the foreseeable future have no detrimental effect on the efficiency of sewage treatment.
3) Alternative procedures for removing ABS from sewage or water supplies by adsorption on particulate matter or by forced frothing have been disclosed and show sufficient promise to warrant continued investigation.
4) Frothing in sewage is not due only to ABS but to a combination of factors which in themselves, exclusive of ABS, could be troublesome.
5) The polyphosphate components of synthetic detergents are largely decomposed and diluted in their passage through sewage plants, surface streams and ultimately to water treating plants and the fractional parts per million that remain in the raw water feed do not constitute a problem in water purification.
6) The phosphate content in surface waters illustrated by those in Illinois consists only partially of inorganic phosphates attributable to detergents. A large portion of the total phosphate comes from land drainage and a lesser amount from organic materials present, likely as biological matter.
7) Reliable analytical methods for determination of ABS and phosphates have been developed and recognized as authoritative by qualified people in the areas involved.★★

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★

P&G Earnings Increase

Consolidated net earnings of The Procter & Gamble Co., Cincinnati, O., for the nine months ended Mar. 31, 1959, were reported at $62,904,705, or $3.05 per common share. These earnings are an increase of 11 per cent from the $56,543,773, or $2.75 per share, reported for the corresponding period in 1958.

Aerosol Hair Sprays

(*From Page* 94)

others studied, and the thymus, contained varying but quite small numbers of macrophages with dense granular nonpigmented or light-brown pigmented cytoplasm, and occasionally a few giant cells. These were present to the same degree in control and treated rabbits. This was also the case for the macrophages, less outstanding but somewhat greater in number, containing cellular debris in the spleen. No macrophages anywhere had in their cytoplasm the foamy lightly basophilic material that is characteristic (in hematoxylin-eosin stains) of retained polyvinylpyrrolidone or perhaps some reaction product.

3. With respect to histological lesions of other than a thesaurosis type, all structures examined were either negative or showed only minor incidental changes, and none of the latter had any correlation with treatment.

4. The two special stains showed, as did the hematoxylin-eosin stain, no difference between treated and control animals in degree or quantity of stainable material in the various structures. The granular material in macrophages in lymphoid structures mentioned under 2. was strongly PAS-positive, with or without enzymatic digestion. Its total quantity, as previously mentioned, was relatively small. Congo Red stain-

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ed less material within macrophages than did PAS, and on the whole was nearly negative, except for staining of cellular debris in the splenic macrophages, and for staining elastic tissue. In the various lymph nodes the Congo Red staining was either negative or of trace degree.

Discussion

The physical characteristics (particle size and distribution) of an aerosol hair spray extruded from a pressurized container depend on (1) the formulation of the product, that is, the characteristics of the propellant gases, the solvent, and the nonvolatile hair fixative; (2) the mechanical details of the release mechanism in the nozzle; and (3) in a minor degree, on the temperature of the container and its contents at the time of release. It is significant that 65 per cent of the weight of the released unimpinged spray was made up of particles in a range of 10 microns or less in diameter, indicating that a significant portion of the total material is in the range which may reach the alveoli, that is, the functional portion of the lung.



Fig. 5. Position of immobilized animals and operator during the spray procedure.

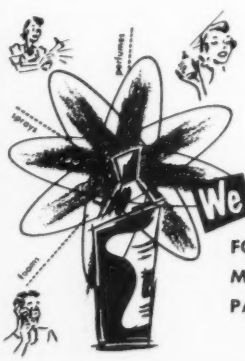
Minimal quantities of the dry spray were collected from one cubic foot of the air available for inspiration following either the 10-second spray release (0.03-0.4 mgs) or 30-second spray release (0.2-2.0



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mgs), calculated as the quantities of the spray inspired in the succeeding five minutes. Such amounts are considered insufficient to produce adverse physiological effects. The collection of minimal quantities of spray from the atmosphere would indicate that a large percentage of the particles are impinged on the hair or settle rapidly from the atmosphere after release. A similar conclusion on the rapid settling of the particles from the atmosphere is reached in the case of the animal exposures. No adverse physiological effects were exhibited in the animal tests, in which the administration of the sprays would be considered excessive in comparison with conditions of actual human use.

Acknowledgments: The authors express their gratitude to J. H. Mark, V.M.D., of our Bureau of Medicine for the analyses of the radiographs, to Dr. K. J. Davis, and Mr. S. Saver for assistance with photomicrographs, to Mr. C. C. Boone and Mr. Glenn E. Martin for taking the radiographs, and to Miss Deborah Reznek for her valuable assistance with the inhalation studies.

Conclusions

1. The physical characteristics of the released spray of six types of aerosol hair spray formulations were investigated.

2. Particle size and distribution patterns of six unimpinged spray types investigated exhibited small variations (less than 10 per cent) between types.

3. Sixty-five per cent by weight of the unimpinged spray consisted of particles measuring 10 microns and less in diameter.

4. The amount of dry spray in cubic foot of air available for inspiration in the human exposures varied from 0.03 to 0.4 mgs. of dry spray following a 10-second spray release, and from 0.2 to 2.0 mgs. following a 30-second spray release. Such quantities are considered incapable of producing adverse physiologic effects.

5. No adverse toxicologic, hematologic, gross and microscopic pathologic, or radiographic effects were observed in the acute and 90-day (twice daily) animal exposures.

6. The data from both the human and animal exposures indicate that the ordinary use of aerosol hair spray preparations of the composition and physical characteristics of those included in our studies poses no problem of safety to users.★★

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Your waxes and polishes take on many new selling advantages when you send them to market in Continental Fluid Flow cans. Consider these features:

No drip nozzle of polyethylene for free flow and exact dripless cutoff.

Wrap around lithography: Solderless construction leaves the entire can (dome top, too) free for decoration with Continental's superb lithography.

Matchless beauty that lasts: Protected by a special varnish that prevents marring during display.

Unsurpassed product protection insured by specially developed enamel linings.

Colored nozzles to match or contrast with can design for added sales appeal.

WIDEST RANGE OF SIZES!

Continental Fluid Flow cans are available in the widest range of sizes, every size you want to satisfy your customer's needs, from 12 oz. to one-half gallon. Get the best can for your polishes and waxes, *plus* Continental research and engineering service. Call Continental today.

QUALITY *Continental* SERVICE

CONTINENTAL CAN COMPANY

Eastern Division: 100 E. 42nd St., New York 17
Central Division: 135 So. La Salle St., Chicago 3
Pacific Division: Russ Building, San Francisco 4
Canadian Division: 5595 Pare St., Montreal, Que.

Packaging...

AEROSOLS · LIQUIDS · PASTES · POWDERS

Operating aerosol filling line (Model 800) of Mojonnier Associates, a division of Kartridge-Pak Machine Co., Franklin Park, Ill., packed them in this firm's exhibit at the 1959 Packaging Show in Chicago last month. Note shelves above and in back of unit loaded with all types of aerosols.



Automotive Chemicals
Cleaners
Detergents
Deodorants
Disinfectants
Floor Products
Insecticides
Laundry Bleach
Metal Cleaners
Moth Products
Polishes
Shampoos
Shave Products
Soaps
Liquid Starch
Toiletries
and other
Chemical Specialties

A market for over 28 billion packages annually





THE PLEDGE OF PROMPT DELIVERY

Manufacturers all over the country have confidence that glass containers and closures ordered from Anchor Hocking will arrive on time! It's a trust that comes from knowing through experience Anchor Hocking's dedication to service. And it's a trust that is well founded. First, there are Anchor Hocking's plants which are strategically located throughout the nation to reduce transportation time. Then, there's Anchor Hocking's tremendous production capacity which speeds your order through the plant. And lastly, there's the Anchor Man—*your* man—the man who follows your order so closely because he is pledged to serve you! So contact an Anchor Man now! Anchor Hocking Glass Corporation, Lancaster, Ohio.

ANCHOR HOCKING

Put an Anchor Man on your team



8 Reasons Why RISDON MICRO-MIST* VALVES

Dispense An Ocean Of Successful Aerosols

1. COMBINES THE DESIGN ADVANTAGES OF THE RISDON VALVE WITH THE FIRST AND FOREMOST MECHANICAL ATOMIZING ACTUATOR.

2. WIDE RANGE OF APPLICATION
Gives excellent performance on all 3-phase products including water-base formulations • Dispenses propellant emulsions or dispersions • Gives Super-spray performance on conventional 2-phase and ultra-low pressure products • Applied to Glass, Metal and Plastic Containers.

3. WIDER CONE, FINER, DRIER SPRAY CLOUD
Softer, more evenly diffused spray eliminates splattering.

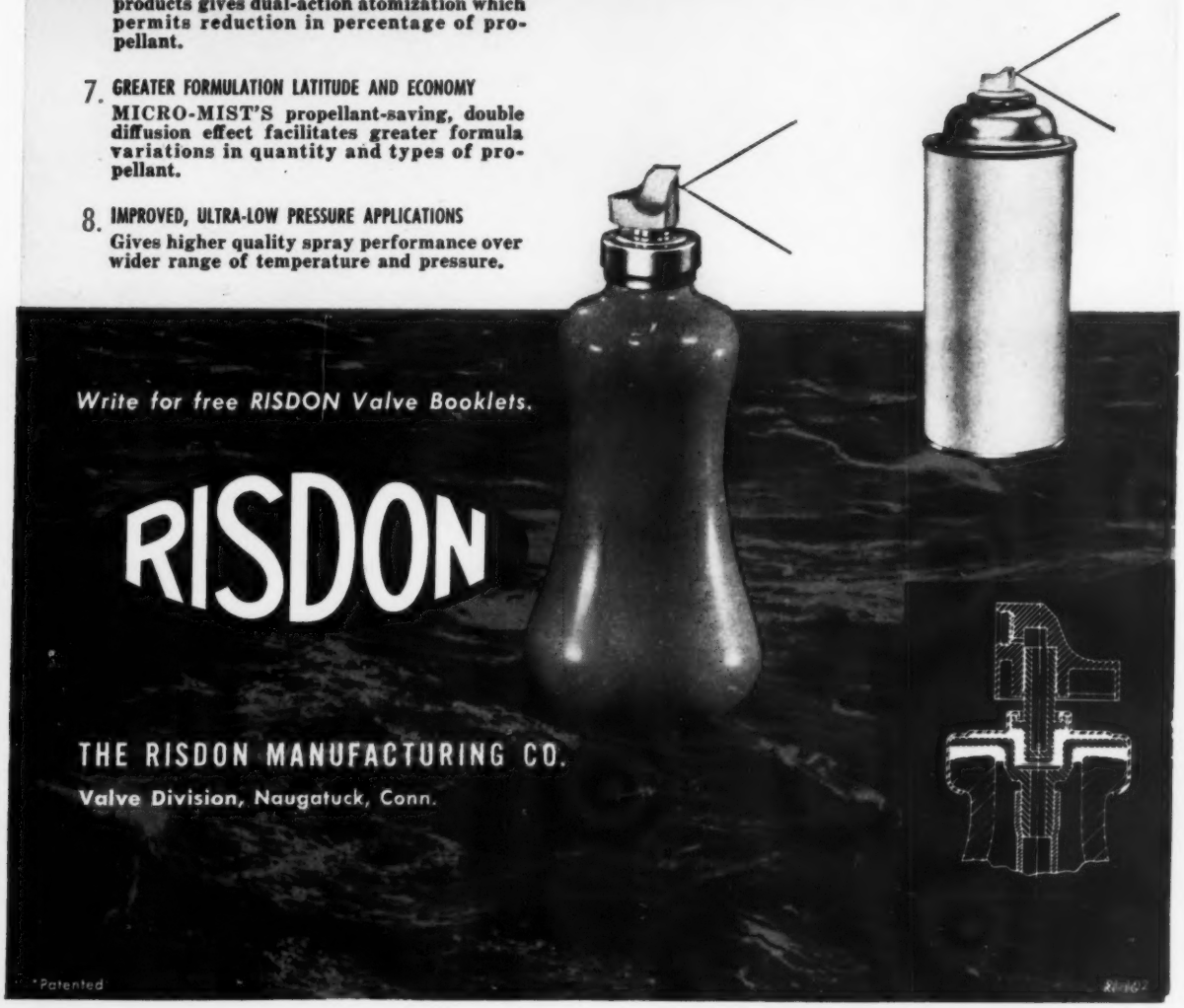
4. LONGER LASTING CONTENTS
Especially advantageous in expensive products such as medicinals and perfumes.

5. SPRAY CONE CLEARS CONTAINER
Eliminates messy accumulation on top of can containers.

6. IMPROVES PRODUCTS BY MINIMIZING DILUTION EFFECTS
Using MICRO-MIST valve on two-phase products gives dual-action atomization which permits reduction in percentage of propellant.

7. GREATER FORMULATION LATITUDE AND ECONOMY
MICRO-MIST'S propellant-saving, double diffusion effect facilitates greater formula variations in quantity and types of propellant.

8. IMPROVED, ULTRA-LOW PRESSURE APPLICATIONS
Gives higher quality spray performance over wider range of temperature and pressure.



Write for free RISDON Valve Booklets.

RISDON

THE RISDON MANUFACTURING CO.
Valve Division, Naugatuck, Conn.

*Patented



a great team... now up to bat

the finest engineering . . .
the finest production facilities,
and the finest
field service program,
backed by strong financial resources,
are now available
in complete ***aerosol***
packaging machinery
by

Mojonnier Associates

a division of
Kartridg-Pak Machine Company,
a subsidiary of
Oscar Mayer & Co., Inc.
9151 Fullerton Ave.
Franklin Park, Ill.

Write for Brochure on NEW Packaging Lines Just Introduced:
New 800 Series Straight Line for Pressure or Cold Filling
New High-Speed Rotary Pressure-Fill Line

NEW FROM FULD!

NOW YOU CAN ENJOY THE PROFIT-PACKED BENEFITS OF PRESSURIZED-PACKAGED PRODUCTS—THANKS TO FULD BROTHERS' QUALITY-CONTROLLED

AEROSOL CUSTOM FILLING SERVICE!



SMALL LOT RUNS OUR SPECIALTY

Now, even if you are a *limited market* distributor, you can send your sales curve "straight up" with Fuld's aerosol custom packaging service. We handle oil and water bases, liquid and foam products of all types . . . insecticides, air fresheners, polishes, bug killers, spot cleaners, deodorants, bactericides, etc. for household, institutional, and industrial use.

Take advantage of our extensive facilities for product development, merchandising research, custom packaging and quality control.

COMPLETE SERVICE FACILITIES

• PRODUCT DEVELOPMENT

We will custom blend to your formula specifications or, package our own tested and proved products under your label—or, assist you in developing new products!

• MERCHANDISING RESEARCH

A recognized leader in aerosol packaged sanitation products, Fuld offers valuable merchandising assistance gained from its experience and continuing research.

• QUALITY CONTROL

Fuld guarantees rigid quality control on all production, regardless of the size of the run . . . the same consistent quality control that has been our policy for over 30 years.

• CUSTOM PACKAGING

A complete selection of smart new containers with built-in sales appeal. And *all*, with your private brand name prominently displayed! All service confidential.

Your choice of Simulated Lithography or Paper Labels

WRITE OR PHONE FOR FULL DETAILS

FULD

BROTHERS, INC.

702 S. Wolfe St., Balto. 31, Md. • West Coast Plant: Los Angeles 13, Calif.



Why large soap and synthetic detergent firm has used Knox bottles for nearly six years

One of the world's largest and most successful soap and synthetic detergent manufacturers* uses Knox Glass bottles on its toilet goods lines.

The company's attitude toward glass containers has been summed up by one spokesman like this:

"Our glass container specifications are generally tighter than most industries, and we insist that they be met. We are constantly keeping quality control checks on our containers—from the time they come into the plant until the time they are taken off the shelf.

"Naturally, we use only those bottles which consistently meet our high demands."

Knox Glass, Inc., has supplied toilet goods bottles to this manufacturer for nearly six years.

Find out more about the glass quality and high standard of service available to you from Knox's eight plants and 35 sales offices.

Contact your nearest Knox representative, or Knox Glass, Inc., Knox, Pennsylvania.

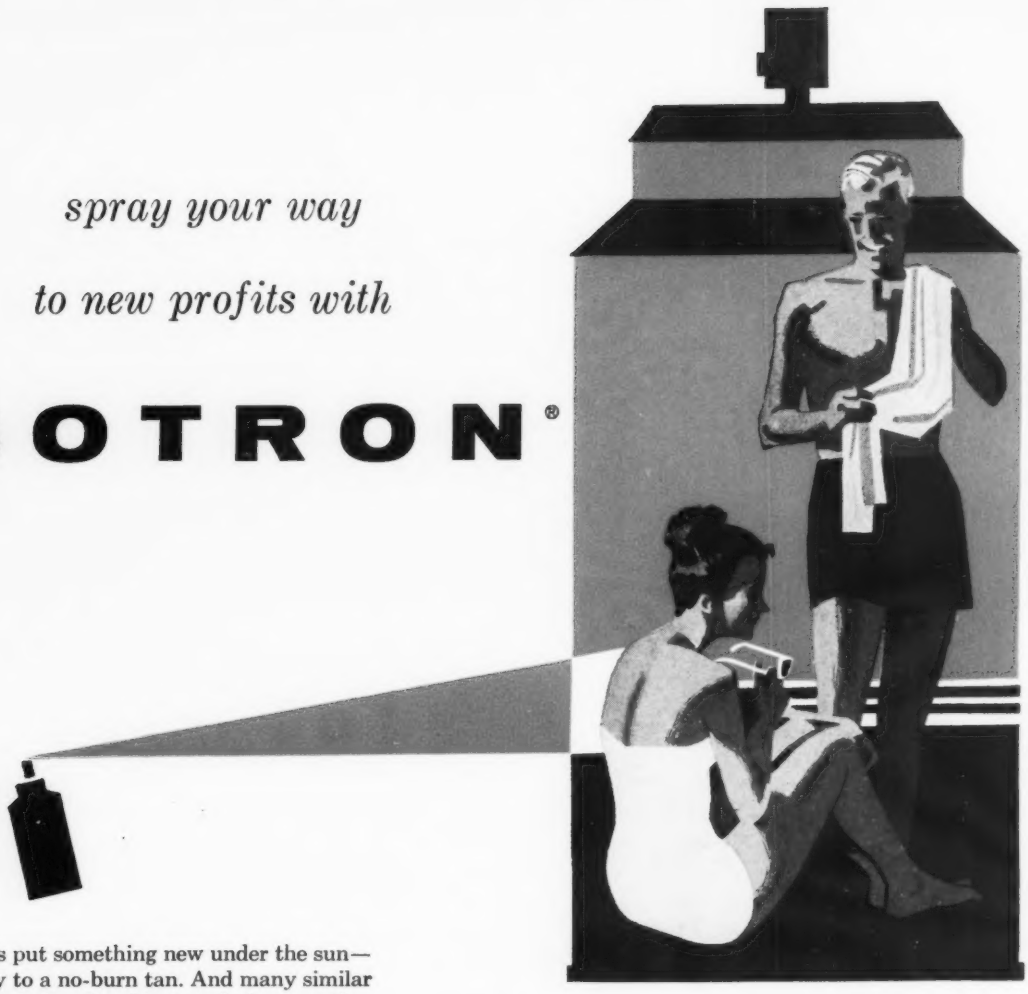
*Name available on request.

the new / **KNOX GLASS**

spray your way

to new profits with

ISOTRON®



Aerosol lotions put something new under the sun—a no-muss way to a no-burn tan. And many similar products . . . including hand lotions, hair cosmetics, colognes, shampoos and depilatories . . . gain instant sales appeal by taking advantage of aerosol packaging with modern propellents like ISOTRON.

Have you investigated your product's aerosol opportunities? Pennsalt's ISOTRON Laboratory helps you with *personalized* aid in adapting your formulation, choosing the correct container, valve and propellent, and testing performance. And expert contract fillers, like those listed here, offer valuable services that simplify production.

Now's the time for a *confidential* discussion of *your* new aerosol. Write or call Pennsalt today.

Pennsalt Chemicals
ESTABLISHED 1850

ISOTRON Department 961
PENNSALT CHEMICALS CORPORATION
Three Penn Center, Philadelphia 2, Pa.

ISOTRON—The Key to Modern Living

For Expert Production of Your Cosmetic Aerosol, Count on . . .

Aeriform Products
Dearborn, Mich.
Aero-Chem Laboratories Inc.
Bridgeport, Conn.
Aero Fil Co.
Ranson, W. Va.
Aeropak, Inc.
Chicago, Ill.
Aerosol Corp. of the South
Arlington, Tenn.
Aerosol Industries
Div. of Zenith Drug Inc.
Newark, N. J.
Allied Professional Associates, Ltd.
Buffalo, N. Y.
A-M-R Chemical Company, Inc.
Brooklyn, N. Y.; Los Angeles, Calif.
Arlenge Laboratories
New York, N. Y.
Armstrong Laboratories
Boston, N.Y.C., Phila.
Associated Brands, Inc.
Brooklyn, N. Y.
G. Barr & Co.
Chicago & New York
Capitol Packaging Co.
Forest Park (Chicago), Ill.
Chase Products Co.
Broadview, Ill.
Claire Mfg. Co.
Ft. Lauderdale, Fla.
Continental Filling Corporation
Danville, Ill. & Hobart, Ind.
Eveready Pressurized Products
Cleveland, Ohio
Fluid Chemical Company, Inc.
Newark, N. J.
Gard Industries, Inc.
Northfield, Ill.
Jet-Aer Corporation
Paterson, N. J.
La Maur, Inc.
Minneapolis, Minn.
Larson Laboratories Inc.
Erie, Pa.
Marcy Laboratories Inc.
Chicago, Ill.
Midwest Consultants, Inc.
St. Louis, Mo.
National Chemical Laboratories, Inc.
West Palm Beach, Fla.
National Spray Can Filling Corp.
Brooklyn, N. Y.
New England Pharmacal Co.
Dearborn, Mich.
Orb Industries
Springfield, Penna.
Peterson Filling & Packaging Co.
Danville, Ill.
Powr-Pak, Inc.
Bridgeport, Conn.
Professional Products Laboratories
Baltimore, Md.
Puritan Distributors Co.
Boston, Mass.
Scranton Aerosol Packaging Div. of the Scranton Corporation
Scranton, Pa.
Southeastern Packaging Co.
St. Petersburg, Fla.
John C. Stalfort & Sons
Baltimore, Md.
Strouse, Inc.
Norristown, Pa.
Thomasson of Pa. Inc.
Norristown, Pa.
Wellston Aerosol Mfg. Co.
Wellston, Ohio



Typical scene at exhibit of Mojonnier Associates where two new operating aerosol filling lines played to "packed house" all during five-day 1959 packaging show in Chicago's International Amphitheatre.

1959 PACKAGING SHOW...

...had everything: aerosol filling lines, plastic detergent bottles and aluminum aerosol cans

IF the close to 30,000 persons who attended the National Packaging Show at the International Amphitheatre in Chicago, April 13-17, were looking for new ideas at the exhibits of 376 companies whose displays covered 146,000 square feet of floor space, they were not disappointed. Virtually every exhibitor representing practically all phases of packaging had at least one new idea or product, and many of these innovations could, without reservation, be termed very significant.

The 1960 Packaging Show moves east to Convention Hall, Atlantic City, N. J., for a five-day run from April 4-8, inclusive. The Packaging Conference, also sponsored by the American Management Association, will be held at the Shelbourne Hotel.

The marketer of soaps, detergents or other chemical specialties who visited the show in Chicago could have picked up a hatful of new ideas, new products and new types of packaging materials and equipment during a visit to any of the hundreds of eye-filling, and some breath-taking exhibits.

For instance . . .

American Can Co., New York, announced that it is adding to its line of aerosol containers an extruded aluminum can.

Mojonnier Associates division of Kartridge-Pak Machine Co.,

Crown Can's "live" aerosol show drew H. R. Shepherd, head of Aerosol Techniques, Inc., center, James Irwin, Crown Chicago rep., to watch spray bandage demonstration.





Aluminum aerosol can introduced for first time at show by American Can Co. goes into production late this year in six ounce size.

a subsidiary of Oscar Mayer & Co., Franklin Park, Ill., presented a new, high-speed rotary aerosol packaging line.

Owens-Illinois Glass Co., Toledo, unveiled a new process of color spraying the entire surface of a glass bottle or jar with ceramic or organic materials to produce unusual color combinations. O-I also displayed a number of linear polyethylene plastic bottles which are being field tested as packaging for several well-known liquid detergents.

Plastic bottles for a number of chemical specialties, including a new, one-gallon, polyethylene container, were featured at the display stand of Plax Corp., Hartford, Conn.

A new booklet, "How to Push Up Profits with Aersols," made its debut at the booth of General Chemical Division of Allied Chemical Corp., New York.

An automatic production line on which packaged products are imprinted with code-dates, prices, contents descriptions and other legends without operator attention was featured at the booth of Adolph Gottscho, Inc., Hillside, N. J.

New trends in pressure packaging of food products were featured at the booth of Air Reduction Co., Madison, Wis., and a booklet entitled "Facts on Gases for Food Products" was distributed.

Crown Cork & Seal Co., Philadelphia, in a "live" exhibit called on a variety of new aerosol packaged products in a dramatic staging to show how pressure packaging is contributing to modern living. Crown also introduced a new vaporolitic finish aerosol can.

A new, more efficient machine for intermittent labeling of round containers was developed and shown for the first time by Labelette Co., Chicago.

The Film Department of E. I. du Pont de Nemours & Co., Wilmington, Del., introduced a 600-gauge polymer-coated film, described as "the most durable cellophane ever offered packagers." Du Pont's new film is aimed at the transparent film market, which Robert R. Smith, packaging sales director of Du Pont's Film Department, said would grow to a billion pounds annually by 1968.

A "new concept in labeling" is the way MRM Co., Brooklyn, N. Y., described its fully automatic Model CM continuous motion labeling machine displayed at the show. The unit features the newly designed glue label pick up and simplified pressure stations.

Two demonstrations by Eastman Chemical Products, Inc., New York, were aimed at showing the suitability of film extruded from "Tenite" polyethylene resins for a wide variety of mass packaging needs.

Three new products were introduced by the Packaging Division of Olin Mathieson Chemical Co., New York, which was exhibiting for the first time. "Skid-Master" containers with built in non-skid properties; "Omnikote," a new kraft board with a white, clay coating for fine printing; and "OF-16," a single cellophane for multipurpose packaging in supermarkets were among the innovations of Olin Mathieson's packaging division, which was formed last year by combining the former Forest Products, Film and Ecusta divisions.

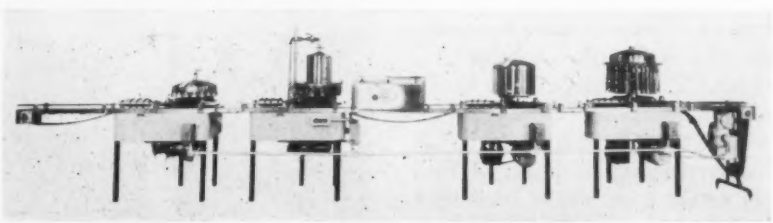
Stokes & Smith, FMC Packaging Machinery Division, Philadelphia, demonstrated three new pieces of equipment. Two were for converting and set-up paper box manufacture. For the first time S&S displayed a complete operation for producing unstayed set-up paper boxes . . . from flat blank to finished box or lid.

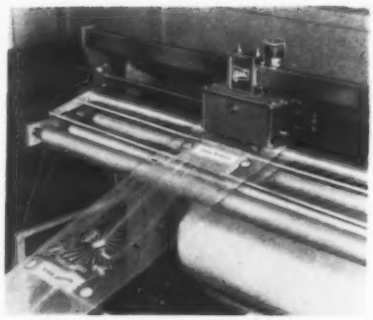
A new anti-fog treatment of "Trycite," transparent polystyrene film, made its inaugural appearance at the booth of Dow Chemical Co., Midland, Mich. Commercial production of the treated film is expected to get underway by next month.

A new folder on "Delrin," acetal resin for use in aerosol containers and for caps and closures for standard and pressure packages and for aerosol valve actuators, was distributed by the Polychemicals Department of E. I. du Pont de Nemours & Co., Wilmington, Del.

Hope Machine Co., Philadelphia, which was acquired earlier this year by Arthur Colton Co., Detroit, demonstrated two of its filling machines. Operating at speeds of from 80 to 125 units per minute was Hope's type 19A, four-line high speed automatic filler which handles liquids in a wide range of viscosities. The 19A unit can be used for filling in containers of plastic, glass, tin or other

New high-speed "900" rotary aerosol filling line, shown for first time at packaging show, can turn out more than 7000 units per hour, according to its maker, Mojonnier Associates Div., Kartridge Pak-Machine Co.





Automatic production line code dater was featured at Adolph Gottscho, Inc., exhibit.

materials. The other Hope filler being demonstrated at the show was Type 15 RF, a low cost, two line filler that operates at speeds of from 50 to 70 containers a minute. This unit is also designed to handle liquid, viscous and semi-viscous products.

Arthur Colton Co. featured its new "Alpha" crimper that is capable of handling 250 aerosol containers per minute. Colton also displayed its various hand operated crimpers and gassers.

Continuous filling vacuum fillers, straightline vacuum fillers and siphon fillers and air bottle cleaners were displayed at the booth of U. S. Bottlers Machinery Co., Chicago. U. S. Bottlers' Model B-2 vacuum filler features adjustable vacuum, regulated flow and two containers always filling. The unit comes with stainless steel contact parts, with plastic available on order.

Continental Can Co., New York, its various subsidiaries and divisions, with one of the most elaborate displays at the show, exhibited its full line of packaging materials from glass bottles (Hazel-Atlas Glass Division) through aerosol cans (Metal Division) to fiber drums (Paper Container Division). In addition Continental's Flexible Packaging Division was pushing plastic bottles in distinctive shapes and sizes for packaging of liquid detergents.

The operation of two complete aerosol filling lines at the booth of Mojonnier Associates, a division of Kartridge-Pak Machine Co., which in turn is a subsidiary of Oscar Mayer & Co., turned out to be a real "show stopper." Against a backdrop which included shelves loaded with a variety of different types of aerosol products, Mojonnier demonstrated its new #800 series straight line, filling samples containers of an aerosol glass cleaner.

On the other side of the Mojonnier exhibit a new, high speed, rotary line pressure-filled sample size containers of Walgreen Laboratories' "Po-Do" shaving cream. The new high speed rotary line, Mojonnier claims, is the "fastest, most advanced aerosol packaging line ever offered." The new 900 line is composed of new fast-moving, continuously operating rotary units with a long continuous-motion conveyor. The rotary units are designed to pass containers along in a smooth continuous flow.

Each rotary unit and its conveyor is controlled by its own motor and variable speed drive. Any slight variations in speed are automatically adjusted by slippage on the surface of the conveyor. Containers are fed from the conveyor into each rotary unit by means of a helical worm drive which "screws itself" into the line of cans, thus assuring proper alignment with the receiving mechanism of the rotary unit.



Plax Corp., Hartford, claimed this many polyethylene gallon containers weighed same as one-gallon glass bottle.

The pressure filler operates on a new principal. The vacuum crimper will not function unless a vacuum is drawn on the can.

A folder distributed at the Mojonnier booth on the new 800 series line and the new 900 rotary line claimed that production on the rotary line is 7000 units per hour and up.

Crown Cork & Seal Co., Philadelphia, literally "staged" an all-aerosol show at its exhibit. With the help of demonstrators who, Crown says, were given more than 12 hours of training, the exhibit

(*Turn to Page* 261

Michael P. Frawley, third from left, executive vice-president, B. T. Babbitt, Inc., was panel speaker during Packaging Conference. Other panelists included J. C. Bowman, Bowman Biscuit Co.; G. D. Billings, G. H. Tennant Co.; R. R. Newquist, Roots-Connersville Blower Division, W. L. Pierce, S. S. Pierce Co., and F. B. Whitlock, Ortho Pharmaceutical Corp.





Advance Styling

...offers more product

H-A's new service adds exciting impact to your package, for greater sales appeal on retail display. We employ advanced styling and design to help you satisfy your customers—to meet their proven demand for new and better products, packaged most conveniently—a practical service, imaginatively conceived. . . and dedicated to your future planning and immediate market.

So think for just a moment—*What do you make that can be improved upon now, that can be better shaped for the future! What would you like to make—and how will you sell it, without advanced styling and design!*

Write Wheeling, or ask your H-A representative how this practical, new service can be put to work for your products today!



and Design Center

excitement with an exciting, new service

HAZEL-ATLAS GLASS

division of

CONTINENTAL CAN COMPANY

Wheeling, West Virginia

STEEL SHIPPING PAILS

If you have products that are going somewhere, send them out in Central's sturdy shipping pails, handsomely lithographed in full color in our own printing department. Send us your label or literature for a decorating suggestion.

In our big, new, ultra-modern plant, we produce a complete line of steel pails—straight side, flaring, lug cover, closed top—in a full range of sizes from 1 to 15 gallons capacity. You have your choice of all kinds of fittings and closures. We are experts on protective linings, too. And Central's specialized slip cover cans are available in sizes from 2 oz. to 20 lbs.

And remember: "Central's famous for fast service!"



for products going places

CENTRAL CAN COMPANY Inc.

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Packaging NOTES

Crown Names Sheen

Al B. Sheen has been appointed sales manager of the mid-west region for Crown Cork & Seal



Al B. Sheen

Co., Philadelphia, S. V. Tuttas, vice-president — sales, announced last month.

Previously manager of the export sales division, Mr. Sheen joined Crown in 1958 after several years with the Coca Cola Export Corp., New York. In his new post he is responsible for sales in 11 mid-western states and makes his headquarters in Chicago.

—★—

Lynch Joins Vulcan

David W. Lynch has joined the sales staff of the Vulcan Steel Container Co. of Birmingham, Ala. Mr. Lynch was formerly widely known in the insecticide and chemical specialties field when he was associated with John Powell & Co., New York, and later with the Velsicol Chemical Corp., Chicago. During the past five years, he has been located on the Pacific Coast in a different line of sales work.

—★—

GCMI Meeting Scheduled

The annual membership meeting of the Glass Container Manufacturers Institute, Inc., New York, will be held at The Greenbrier, White Sulphur Springs, W. Va., May 19-22, according to Victor L. Hall, general manager of the organization.

General sessions will be held May 20 and May 22 with conferences on special subjects scheduled for May 21.

Speakers will include William L. Shirer, foreign correspondent, who will discuss current developments in Russia and Germany; Glenn A. Mengle, GCMI president; and representatives and members of the GCMI staff.

—★—

Kimble Appoints Emish

John S. Emish has been named Chicago branch sales representative for Kimble Glass Co., Vineland, N. J., a subsidiary of Owens-Illinois Glass Co., Toledo, O. In his new post he handles sales of the firm's container and closure products.

With Kimble since 1957, Mr. Emish was most recently supervisor of the tubing standardization program at Vineland. He also has held positions in the specifications and decorating departments.

—★—

Scovill Appoints Two

Lamson M. Scovill has been appointed eastern district sales manager and John H. Gelwicks has been named western district sales manager for the cosmetic container division of Scovill Manufacturing

Lamson M. Scovill



Co., Waterbury, Connecticut.

With the company since 1932, Mr. Scovill has served as a salesman for cosmetic containers in New York area. He is now responsible for the territory east of Cleveland.

Mr. Gelwicks joined Scovill



John H. Gelwiks

in 1945 and was most recently a salesman for the division in the Chicago area. In his new post he is responsible for the territory west of Cleveland.

—★—

Plax Buys Shulton Patents

Exclusive rights to U. S. Patent No. 2,811,468 and related world-wide patents for the fluorination of plastics were purchased recently by Plax Corp., Hartford, Conn., from Shulton, Inc., Clifton, N. J., Robert F. Elder, Plax president, announced last month. Fluorination of polyethylene containers, molded parts, and film is expected to be among the first applications. Plax is currently investigating fluorination as a method for reducing the permeability of polyethylene and other thermoplastics.

—★—

New Steel Container Plant

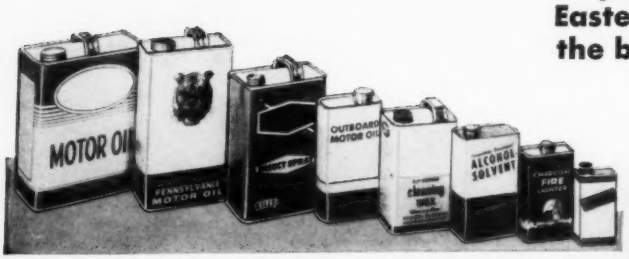
Southwestern Steel Container Co., Dallas, Tex., has begun operation of a new plant for the manufacture of steel pails and drums, Gordon D. Zuck, president, announced last month. Currently manufacturing steel pails in capacities of from one to seven gallons, the company is adding a produc-

GOOD PRODUCTS

Deserve GOOD CONTAINERS

Specify Eastern for the best in

DEPENDABILITY
DESIGN
DURABILITY
DECORATION
SERVICE



SIZES: 12 OZ. ROUND; and "F" STYLE ½ PINT, PINT, QUART, 40 OUNCE, ½ GALLON, U. S. GALLON, IMPERIAL GALLON, and 2 GALLON.

ROUND and SQUARE CANS IN ALL SIZES for a VARIETY of PRODUCTS

W N S

EASTERN CAN CO., INC.

31 Keap St., Brooklyn 11, N. Y.

ULster 5-0100

New book on Aerosols . . .

"PRESSURIZED PACKAGING"

(AEROSOLS)

By A. HERZKA AND J. PICKTHALL

19 Chapters . . . 411 Pages

Contains chapters covering propellants, filling techniques, laboratory testing, dispenser components, and 13 chapters on formulation of cosmetics, perfumes, foods, hair preparations, foam preparations, insecticides, space deodorants, medicinal preparations, paints, varnishes and removers, fire extinguishers, and a general formulary of aerosol products. Profusely illustrated. Index of aerosol trade names and glossary of terms. Compiled by two outstanding British authorities. The first complete work on aerosols yet to be published.

Cloth bound. **$12.00** postpaid in the U.S.A.
$12.50 elsewhere.

Check must accompany order. Add 3% if in N. Y. City.

MacNair-Dorland Company
254 West 31st St. New York 1, N. Y.

Herewith is check for $..... covering ..... copies of "Pressurized Packaging" by Herzka and Pickthall. Please ship postpaid to the following:

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Check must accompany order. Add 3% if in N. Y. City.

tion line for 15 to 55 gallon drums. Southwestern is producing containers in a wide variety of gauges and types, and has facilities for furnishing a full range of "Hi-Bake" linings, pouring openings, and lithographed containers, according to Mr. Zuck.

Specializing in the manufacture of steel shipping containers the company maintains complete warehouse stocks of all trade sizes at its plant in principal cities in the southwest. The new plant has over 40,000 square feet of floor space, a railroad siding, and truck loading facilities. It will eventually employ between 80 and 100 employees.

Besides Mr. Zuck, Southwestern's officers include Fred A. Kusta, vice-president; Charles B. Little, Jr., vice-president and sales manager; and Ruth Janet Zuck, secretary-treasurer.

—★—

O-I Builds Box Plant

Owens-Illinois Glass Co., Toledo, O., is building a corrugated box plant this spring for its paper products division in Valley Industrial Park, 20 miles southeast of Minneapolis. The plant is scheduled for completion by Feb. 1, 1960.

O-I has purchased 77 acres in the park which is a 2,275-acre tract set aside by the Minneapolis Area Development Corp. for an industrial community. The box plant together with parking facilities and landscaping will take up 21 acres of the company's site and will be a concrete block and structural steel building with 153,000 square feet of floor space. The remaining acreage will be used for future expansion of box making or other O-I manufacturing facilities.

Currently operating a smaller unit in St. Paul, the paper products division will shift its equipment and personnel to the new plant at which 150 persons will be eventually employed.

—★—

American Appoints Nichols

Albert B. Nichols, Jr., has been appointed general sales manager of Bradley-Sun division of American Can Co. in Hillside, N. J., C. L. Alexander, division vice-president and general manager announced recently. In 1951 Mr. Nichols joined Sun Tube Corp. which was later merged into the Bradley-Sun division. Previously assistant general sales manager, he is succeeded by Harold M. Hansen, who for the past three years has been Philadelphia district sales manager for the division and one of its predecessor companies, Bradley Container Corp.

The division operates plants in Hillside and Washington, N. J., and Maynard, Mass., and produces a line of collapsible metal and plastic tubes, plastic "squeeze bottles," and other products.

David G. Bernard is now general manager of sales for the Canco Division of American Can Co., New York. Formerly assistant general manager of the Division's commercial development department, Mr. Bernard has been with the company since 1948.





Aerial view of new Southwestern Steel Container Co. plant in Dallas, Tex. Plant of 40,000 square feet will produce steel pails and drums of from 15 to 55 gallons.

Bennett Container Specs.

Complete specifications with drawings and diagrams have been published by Bennett Industries, Inc., Peotone, Ill., for its lug and tight head five gallon steel pails and open and tight head 55 gallon steel drums. Prepared on single sheets in a file folder, the specifications include information about the company's "Dura-Prime" process for cleaning and phosphating

New pharmaceutical gallon packer with a built-in glass handle introduced last month by Owens-Illinois Glass Co., Toledo, weighs 49½-ounces compared with 52-ounces for the standard packer. The new container is used for packaging heavy liquids, drugs, and bulk elixirs, and holds 128-ounces. A major reason for the development of the new container, according to the company, was to provide easier and safer handling by the increased number of pharmacists and technicians who are women.





the complete line in stock

FOR PHARMACEUTICAL AND PROPRIETARY MANUFACTURERS



There is no finer line of containers for ethical packaging available anywhere . . . and the complete line is in stock for immediate delivery.

The complete line includes: wide mouth rounds, blakes, gem ovals, century ovals, narrow mouth rounds, wide mouth square powders, iodines, ointment jars, peroxides, liquid shelf bottles and a full line of Demuth Clear-Vu vials in a wide range of sizes.

Our quality control assures exceptional uniformity in every container and positive protection for your preparations.

Feel free to contact us regarding any packaging problem.

SYMBOL OF QUALITY · GLASS CONTAINERS

BROCKWAY GLASS COMPANY, INC.

BROCKWAY, PENNSYLVANIA

Sales Offices in Principal Cities

Subsidiary—Demuth Glass Works, Inc., Parkersburg, W. Va.

Plants: Brockway, Pa. • Crenshaw, Pa. • Lapel, Ind. • Muskogee, Okla. • Freehold, N. J.

drums to inhibit rust and corrosion and for paint and lining adhesion. The specifications may be obtained from Bennett Industries, Inc., Peotone, Ill.

—★—

Carton Volume Increases

Dollar volume of folding carton shipments in March amounted to $79,500,000, an increase of 5.5 per cent over the same month last year, the Folding Paper Box Association of America, Chicago, reported last month. Industry output for the month increased 6.6 per cent for a total of 203,830 tons.

Shipments for the first quarter of this year also showed an increase. Dollar value rose 1.5 per cent for a total of $222,623,000 and production increased 1.4 per cent to 567,138. Except for the metropolitan New York area, which had a six per cent decline, the increased activity was national.

—★—

Thatcher in Plastics

Thatcher Glass Manufacturing Co., New York, has formed a plastic container division as a result of its recent purchase of Plastic Tube and Bottle, Inc., Nashua, N. H. Announcement of the new division was made by William J. Green, Thatcher president, at the annual stockholders' meeting held last month. The company also recently purchased The Celon Co., Muscatine, Ia., manufacturer of plastic closures and cellulose bands used as secondary seals for glass containers.

Mr. Green noted that there would be substantial research and development done before the division goes into full production on its line of polyethylene "squeeze-to-use" tubes and bottles. The division is also introducing a line of polyvinyl "squeeze-to-use" tubes scheduled for production during the last half of this year.

The Nashua firm and its associate, Plastic Tube and Bottle Distributors, Inc., were formed by Henry E. Griffith, who has been elected vice-president of the new division.



David W. Lynch has joined Vulcan Steel Container Co. of Birmingham, Ala., it was announced last month by Gordon D. Zuck, president. Details on page 169.

O-I Color Spray Process

A new process of color spraying the surface of glass containers with ceramic or organic materials has been developed by Owens-Illinois Glass Co., Toledo, O., S. F. Davis, vice-president and general sales manager of the glass container division, announced recently. Special machinery developed for the process by O-I has been installed at the company's Clarion, Pa., plant.

O-I expects that the spraying process may offer merchandising advantages to industries using glass containers through the development of unusual color combinations and the use of plastic and metal closures that blend or contrast with the colored containers. Screen decorations for label purposes can be applied on ceramic finishes.

At the start, O-I says, size limitations of containers will be 12 inches in height and four inches in diameter. It is expected, however, that in the future it may be possible to handle slightly larger containers.

—★—

Metal Can Shipments Down

Shipments of metal cans in the first two months of this year decreased to 618,363 tons from 630,489 tons in the corresponding 1958 period, the Can Manufacturers Institute, New York, reported last month. The main reason for the decline, according to the institute, was a 29 per cent decrease in the use of cans for dairy products.

—★—

Plax Appoints Henstrand

Oke R. Henstrand has been named advertising and sales promotion manager for Plax Corp., Hartford, Conn. Previously he was an account executive for Hugh H. Graham and Associates, New Britain, Conn., advertising agency, and has been engaged in advertising agency, and sales promotion work since 1940.

An assortment of stock mold bottles and jars which have been put through color spray process developed by Owens-Illinois Glass Co., Toledo, O.



VSC CO STEEL PAILS and DRUMS — the "Natural" Container for Your Product



Nature provided a "Natural" fur-lined container for the protection of baby Kangaroos—BUT, Nature left to us the job of providing the "Natural" container for YOUR PRODUCT—VSC CO's Quality Steel Pails and Drums—

HI-BAKE LINED



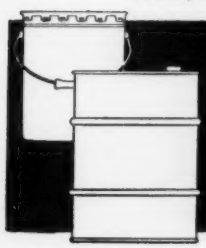
- Pail Sizes—1 through 13 gallons.
- Drum Sizes—15 through 65 gallons.
- All styles—Open-Head, Closed-Head
- All popular Pouring and Filling Openings (UPressit caps and seals, screw caps with pull up spouts or Flex-spouts, as required.)
- Bolted or Lever Closures
- Meet all Standard Specifications
- Hi-Bake Protective Linings
- Lithographed, or your choice solid color exterior.

At no obligation—consult our staff on your packaging problems. We furnish special sizes and special gauge containers on request.

Write, Wire, Phone for Prices, Samples.

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VULCAN STEEL CONTAINER CO.

Main Office and Factory

3315 35th AVE., N. • P. O. BOX 786 • BIRMINGHAM, ALABAMA

What's New?

New "Turbo" shampoo made by WB Chemical Co., Mount Vernon, N. Y., for use with home vacuum rug cleaning attachment produced by Electrolux Corp., New York, is packaged in 16-ounce plastic bottle from Plax Corp., Hartford, Conn. Said to be odorless, non-inflammable, and non-toxic, "Turbo" retails for $1.95 from Electrolux branch offices or sales representatives.





A new pressure packaged toiletries line, called "On Tap By Cara Nome", is being marketed by Rexall Drug Co., Los Angeles, in recently developed plastic-coated glass bottles from Owens-Illinois Glass Co., Toledo, O. Included in the line are "Brite" shampoo, "Radiance" perfumed hand lotion, and "Fast Clean" facial cleanser. Container colors, left to right, are yellow with red and black lettering; turquoise with white and black lettering; and pink with red and black lettering.

"Protex-A-Hand" is a new pressure packaged hand cream developed by Acrolite Products, Inc., Rahway, N. J. Product is available in seven-ounce and 22-ounce aerosol cans from American Can Co., New York, with valves from Aerosol Research Co., Forest Park, Ill. With lanolin and glycerine in its formulation, "Protex-A-Hand" is claimed to form an invisible "protective glove" to seal out dirt, paints, oil, and chemicals. Claimed by the maker effective for four hours and dissolves with ordinary washing.









"Instant Simoniz" from Simoniz Co., Chicago, is packaged in an aerosol container from Continental Can Co., New York, with valves made by Clayton Valve Corp., St. Louis. Simoniz fills the product at its Kankakee, Ill., plant. Said to be suited for all car finishes, including the new acrylics and melamines, "Instant Simoniz" retails for $2.50.

Parsons Ammonia Co., New York, is offering a four-ounce polyethylene Boston Round dispenser bottle from the plastic container division of Continental Can Co., New York, for supermarket promotion of its "Sudsy Ammonia." Designed for use as a handy dispenser of ammonia and water combinations, the bottle has a plastic screw-on closure fitted with a tube and a hinge-style cap to protect the spray opening. A green printed design provides brand name and instructions for use. New container replaces Boston Round glass container with plunger dispensers.

Aerocos, Aerosol Corp. of the South, Arlington, Tenn., has introduced "Regent" nail polish remover in five and 15 ounce aerosol containers from Continental Can Co., New York, with valves by Precision Valve Corp., Yonkers, N.Y. Marketed through beautician supply dealers, "Regent" is said to remove polish instantly and without smearing the user's skin or cuticle.

"Seaforth Travel Trio" from Chesebrough-Pond's, Inc., New York, includes three plastic containers from Plax Corp., Hartford, Conn., for shave lotion, men's cologne, and deodorant. Cardboard outer container simulates attache case. Item is being promoted for Father's Day next month.

"Duel," a combination disinfectant and deodorant for commercial and institutional use from National Laboratories, Inc., Toledo, O., is being packaged in 16-ounce aerosol containers made by Continental Can Co., New York. Lithographed container features product name with sword illustration in red, white, blue, and black.











Two new aerosol spot removers, one in spray form, the other a foam, were introduced recently by Duraclean Co., Deerfield, Ill. They are packaged in aerosol "Spra-Tainers" from Crown Cork & Seal Co., Philadelphia. Previously distributed in bulk to Duraclean dealers who clean upholstery and drapery type items, the products mark the company's entry into the consumer field. Said to leave no odor, the products may be used on all types of fabrics.

Facial cleanser from the Stanley Home Products, Inc., Easthampton, Mass., tradenamed "Glo-Foam" is pressure packaged in six-ounce "Spra-Tainer" from Crown Cork & Seal Co., Philadelphia. Product, which contains hexachlorphene, retails for about $1.45.

A cologne called "White Enchantment" is being marketed in aerosol containers by Continental Perfumes, New York. Product is filled by Old Empire, Inc., Newark, N. J., with valve by Precision Valve Corp., Yonkers, N. Y., and golden overcap supplied by Gilbert Plastics, Inc., Hillside, N. J.

"Prestone" car polish from National Carbon Co. division of Union Carbide Corp., New York, is packaged in a pint can with a squirt spout. A silicone cleaner and wax combination, the product may be used on all auto finishes. It is also available in a gallon professional size can. List price of the polish is $1.75. Continental Can Co., New York, supplies both can and "squirt" spout of plastic.

Selig's new pressure packaged, "Strobane" base insecticide for crawling and flying insects, comes in 16 ounce American can. Designed for use in hotels, motels, cafeterias, restaurants, stores, service stations and homes, product features new and unusual cherry fragrance. Marketed by Selig Co., Atlanta, container features valve by Precision. Can be used for space spraying and as residual. Hysan Products Co., Chicago, is the filler.





LABORATORY
QUALITY CONTROL
PRODUCTION....



The links for successful pressure packaging are forged before your product reaches the consumer. Here, at Continental Filling Corporation, the links of laboratory, quality control, and production are intertwined. When it comes to pressure packaging, Continental Filling Corporation has the know-how and the facilities that help make your product scientifically perfect.

CONTINENTAL FILLING CORPORATION

DANVILLE, ILLINOIS



1875

. . . Back in the cracker barrel era, dapper derbied salesmen began to show their products packaged in glass containers. The public liked what they "saw," and glass factories began to flourish. Today Metro's modern glass containers, reduced in weight, sanitary, odorless and available in clean, eye-catching designs, help sell many of the best products made. Metro research does away with guessing . . . Metro speed meets your time schedule . . . Metro quality can't be beat. That's ***metromatic . . . when you need it!***

MANUFACTURERS OF QUALITY GLASS CONTAINERS

METRO GLASS

METRO GLASS COMPANY, INC., GENERAL OFFICES: JERSEY CITY, NEW JERSEY



NEW FORMULATION SERVICE . . . most up-to-date of its kind in America, to help fillers and marketers develop new aerosols, modernize older ones, profitably!

ALL REPRESENTATIVES TECHNICALLY TRAINED . . . you'll enjoy dealing with men who know aerosol markets, understand production problems.

ON-TIME DELIVERY of the quantity you need, from a nationwide network of distribution points.

YEARS OF EXPERIENCE back the high quality of UCON Propellants . . . and the technical assistance now available to you.

CARBIDE has long been active in emulsion technology, surface-coating technology, silicones, solvents, and the manufacture and handling of gases . . . all associated with the aerosol industry. Thus, UCON Propellants are a logical extension of CARBIDE's research and development programs.

For more information, write: UCON Propellants, Union Carbide Chemicals Company, 30 East 42nd St., New York 17, N. Y. Call, write or wire us, today! Attention, Dept. C-5.

UCON and UNION CARBIDE are registered trade marks of Union Carbide Corporation.

UNION CARBIDE CHEMICALS COMPANY
Division of Union Carbide Corporation

UNION CARBIDE
Ucon
BRAND
propellants

UCON Propellants are available in five grades

UCON Propellant 11 Trichloromonofluoromethane
UCON Propellant 12 Dichlorodifluoromethane
UCON Propellant 22 Monochlorodifluoromethane
UCON Propellant 113 Trichlorotrifluoroethane
UCON Propellant 114 Dichlorotetrafluoroethane

NEW Trade Marks

THE following trade marks were published in recent issues of the *Official Gazette* of the U. S. Patent Office in compliance with section 12 (a) of the Trade Mark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. See rules 20.1 to 20.5. As provided by section 31 of the Act, a fee of $25 must accompany each notice of opposition.

PI—This for metal polish. Filed July 25, 1958 by Polishes Imported, Ltd., Mamaroneck, N. Y. Claims use since July 15, 1958.

Flormate — This for sweeping compounds, liquid scrub soaps, and liquid floor cleaners. Filed May 5, 1958 by Janitorial Supplies Corp., Albany, N. Y. Claims use since Aug. 5, 1957.

Clear-Vu—This for preparation for cleaning and polishing the lenses of eye glasses. Filed May 8, 1957 by Sylvan M. Edison, doing business as Edison Chemical Co., Chicago. Claims use since Feb. 1, 1926

Flex-O-Lite — This for floor waxes. Filed May 14, 1958 by Marshall L. Magee, doing business as Magee Chemical Co., Bensenville, Ill. Claims use since on or about Apr. 24, 1958.

V-10—This for preparation used as a fungicide and bactericide. Filed Feb. 4, 1958 by Vineland Chemical Sales Corp., Vineland, N. J. Claims use since Sept. 28, 1956.

Pregna-Paper—This for insect repellents in the nature of paper tissues. Filed Mar. 31, 1958 by Orchard Paper Co., St. Louis. Claims use since Mar. 17, 1958.

Glyoxide—This for fungicides and miticides. Filed Aug. 7, 1958 by Pittsburgh Plate Glass Co., Pittsburgh, Pa. Claims use since May 1, 1958.

X.T.C.—This for laundry detergent. Filed July 21, 1958 by the Stamford Chemical Co., Stamford, Conn. Claims use since Apr. 29, 1958.

Stephenson Chemicals — This for insecticides, pesticides, and rodenticides. Filed Dec. 10, 1956 by Calvin P. Stephenson, doing business as Stephenson Chemical Co., College Park, Ga. Claims use since Aug. 22, 1956.

Dri-Powr—This for combined cleaner and polish for automobiles, aircraft, and the like. Filed Apr. 18, 1958 by Clarence C. Wynn, doing business as Dri-Powr Co., Azusa, Calif. Claims use since July 1957.

One-Der—This for ceramic tile cleaner. Filed Dec. 13, 1955 by Surf Chemical Corp., Burbank, Calif. Claims use since May 16, 1955.

Easy Bright—This for liquid detergent. Filed Aug. 28, 1958 by Blue Magic, Inc., Passaic, N. J. Claims use since Aug. 11, 1958.

Gahns—This for hard soap, soft soap, soap flakes, soap powder, and scouring powder. Filed Sept. 3, 1958 by Henrik Gahns Aktiebolag, Uppsala, Sweden. Claims use since July 6, 1926.

Iodet—This for acidic liquid iodophoric detergent for use in washing and sanitizing food utensils. Filed Sept. 25, 1958 by The DuBois Co., Cincinnati, O. Claims use since Feb, 3, 1958.

Bonchem—This for cleaning compositions. Filed Oct. 10, 1958 by Bonewitz Chemicals, Inc., Burlington, Ia. Claims use since Sept. 27, 1955.

N-Dit—This for liquid detergent and disinfectant. Filed Oct. 30, 1958 by J. I. Holcomb Manufacturing Co., Indianapolis, Ind. Claims use since Oct. 15, 1958.

Spree — This for toilet soap, household cleanser, and detergents in liquid form. Filed Sept. 23, 1958 by Colgate-Palmolive Co., New York. Claims use since April 27, 1955.

Basin Bath—This for liquid detergent for laundering. Filed Oct. 7, 1958 by Etka Chemical Co., Troy, N.Y. Claims use since Aug. 15, 1958.

Patco's Pestkill—This for insecticide for lawns. Filed July 30, 1958 by Lee Patten Seed Co., Jersey City, N. J. Claims use since May 2, 1956.

Safe Nox—This for aerosol insecticide. Filed Sept. 5, 1958 by Claire Manufacturing Co., Chicago. Claims use since May 12, 1958.

KXL—This for insecticide-fungicide. Filed Oct. 1, 1958 by Thomas James, doing business as James Chemical Co., Colma, Calif. Claims use since Mar. 1, 1946.

Play Ball!—This for kit comprising soap and wash cloth. Filed Nov. 26, 1957 by Tom Fields, Ltd., Englewood, N. J. Claims use since April 13, 1953.

Hood — This for household cleaner, and a bleach and disinfectant which has cleaning, germicidal, and deodorizing properties. Filed Aug. 14, 1958 by Hood Chemical Co., Ardmore, Pa. Claims use since Sept. 29, 1954.

Lux—This for soap and detergent for general washing and cleaning. Filed Sept. 11, 1958 by Lever Brothers Co., New York. Claims use since Jan. 1, 1900.

—★—

Knox Sales Up in Quarter

Net sales of Knox Glass, Inc., Knox, Pa., for the quarter ended March 31, 1959, were reported recently at $9,270,780, compared with $8,319,209 for the corresponding 1958 period. Net income amounted to $267,514, or 53 cents per common share on 502,210 shares outstanding, against $191,965, or 38 cents a share on 115,334 shares outstanding, in 1958.

For the six months ended March 31 net income was $452,527, compared with $334,334 last year, and net sales were $18,401,590 against $16,813,919 in 1958. The quarter results were reported by Arthur W. Wishart, president, at the company's directors meeting last month.

—★—

Glass Container Output Up

Shipments of glass containers in the first quarter of this year reached a record high for first quarter shipments, R. L. Chemey, executive director and marketing manager of Glass Container Manufacturers Institute, Inc., New York, reported last month. Domestic shipments of new glass containers by the 39 U.S. glass container manufacturers who are members of the Institute, and represent more than 92 per cent of the industry, were 4.4 billion units, an increase of 2.6 per cent over the 4.3 billion units shipped in the first quarter of 1958.

Chemical, household and industrial supply packers received shipments of 0.4 billion units and toiletries and cosmetic bottle shipments for the quarter totalled 0.4 billion units, an increase, respectively, of 21.3 per cent and 13.9 per cent above the 1958 quarter.

Automotive Specialties

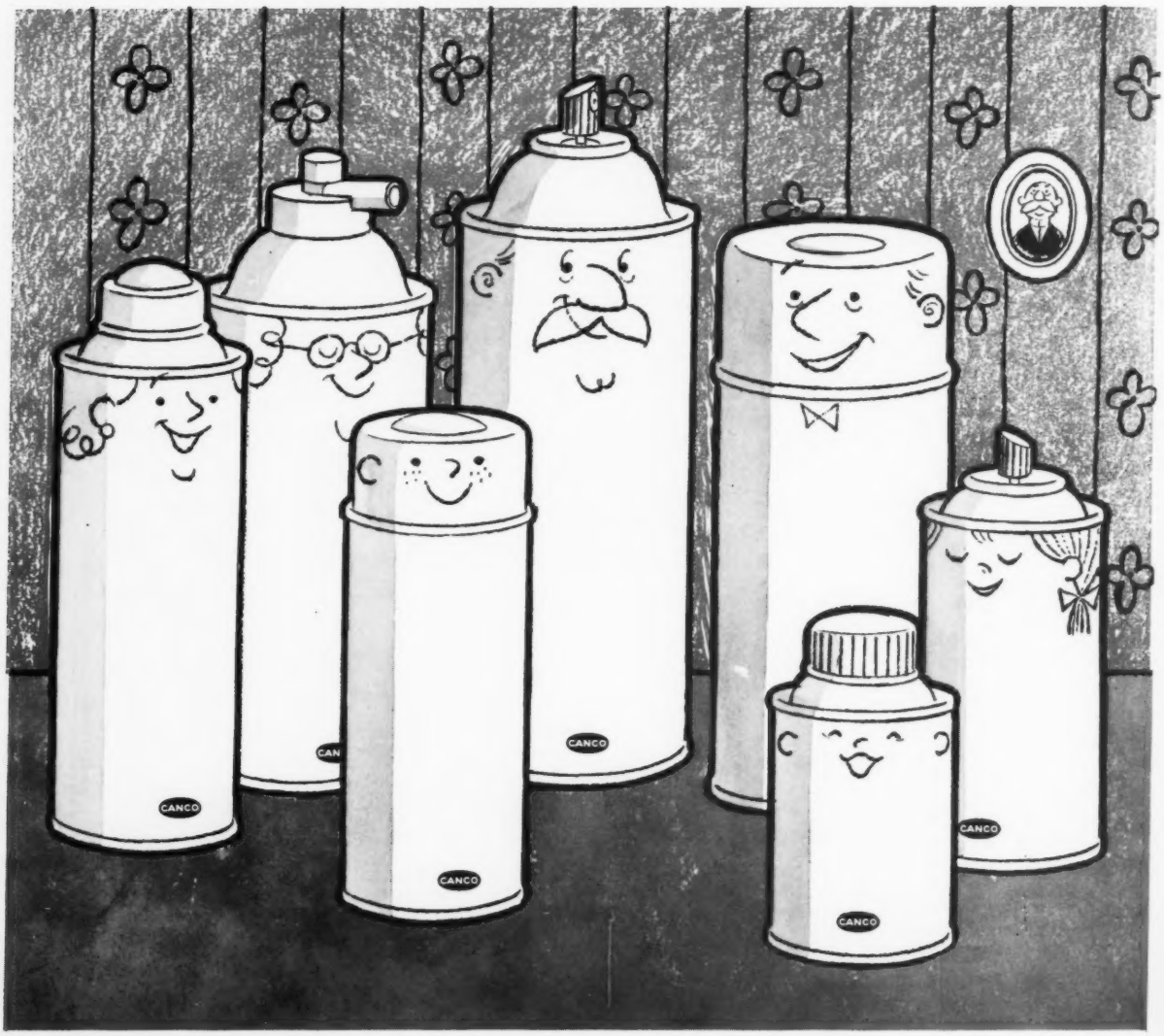
(*From Page* 103)

Discussion:

We have discussed but a few of the many items produced to service and maintain automobiles. The need for automotive specialties is assured as long as automobiles continue to serve a useful function. While some of today's products may become obsolete due to new designs, it is our opinion that the overall number of specialty products will continue to increase as a result of newly created demands.

Specialty manufacturers have in the past proven themselves capable of adapting to each new phase of development and there is every reason to believe that they will continue to do so.★★

Canco has the largest family of Aerosol cans to fit your product needs!



Because Canco has the largest and most complete line of aerosol cans in the industry, you're sure to find the right container to fit your product requirements.

Canco manufactures seven sizes with standard one-inch cup opening or individually styled one-piece tops. Canco also offers an end-use warranty on these containers.

And remember—Canco's famous package design staff is at your service to create new sales appeal for your product with compelling color lithography.

Discover for yourself why so many successful aerosol packers depend on Canco. Call your Canco salesman!

A SAMPLE KIT containing all seven Canco pressure cans is yours free. It's available through your Canco salesman only. Ask him for yours, today!



CANCO Division AMERICAN CAN COMPANY

NEW YORK • CHICAGO
NEW ORLEANS • SAN FRANCISCO

The most preferred...

FOR PRESSURIZED FOAM PRODUCTS!

Clayton

"NOZZLE DOWN"
dispensing valves and covers



Preferred in use — CLAYTON NOZZLE DOWN Valves dispense pressure-propelled products in the most natural and the most efficient way . . . pointing the product where you want it . . . eliminating misses and messes. Functionally dependable, they never clog . . . always stay intact. Flow rates and materials to meet specific product requirements.

Preferred in production — they assure uniform gassing . . . pressure-fill at highest speeds. Completely assembled — no parts to put together in your plant.

Preferred in shipment — the components can't come apart! Your product stays safe with the Patented Screw Valve Covers . . . the most positive-action covers on the market!

Preferred in every respect — for shaving creams, shampoos . . . waxes, polishes, upholstery cleaners, charcoal lighters, etc. CLAYTON NOZZLE DOWN VALVES ARE THE MOST ACCEPTED, PREFERRED AND CONSISTENTLY BOUGHT VALVES FOR FOAM PRODUCTS . . . THE MOST EFFECTIVE FOR ALL CREAM AND LIQUID PRODUCTS!



ALL VALVES AVAILABLE WITH COLOR-ENAMELED MOUNTING CUPS. HIGHEST QUALITY, CHEMICAL AND CORROSION-RESISTANT INTERIOR COATINGS

DIP TUBE VALVE

The best available! Dispenses with forward or downward push. Gasses and dispenses uniformly. Pressure fills at highest speeds. No metal valve parts exposed to product.

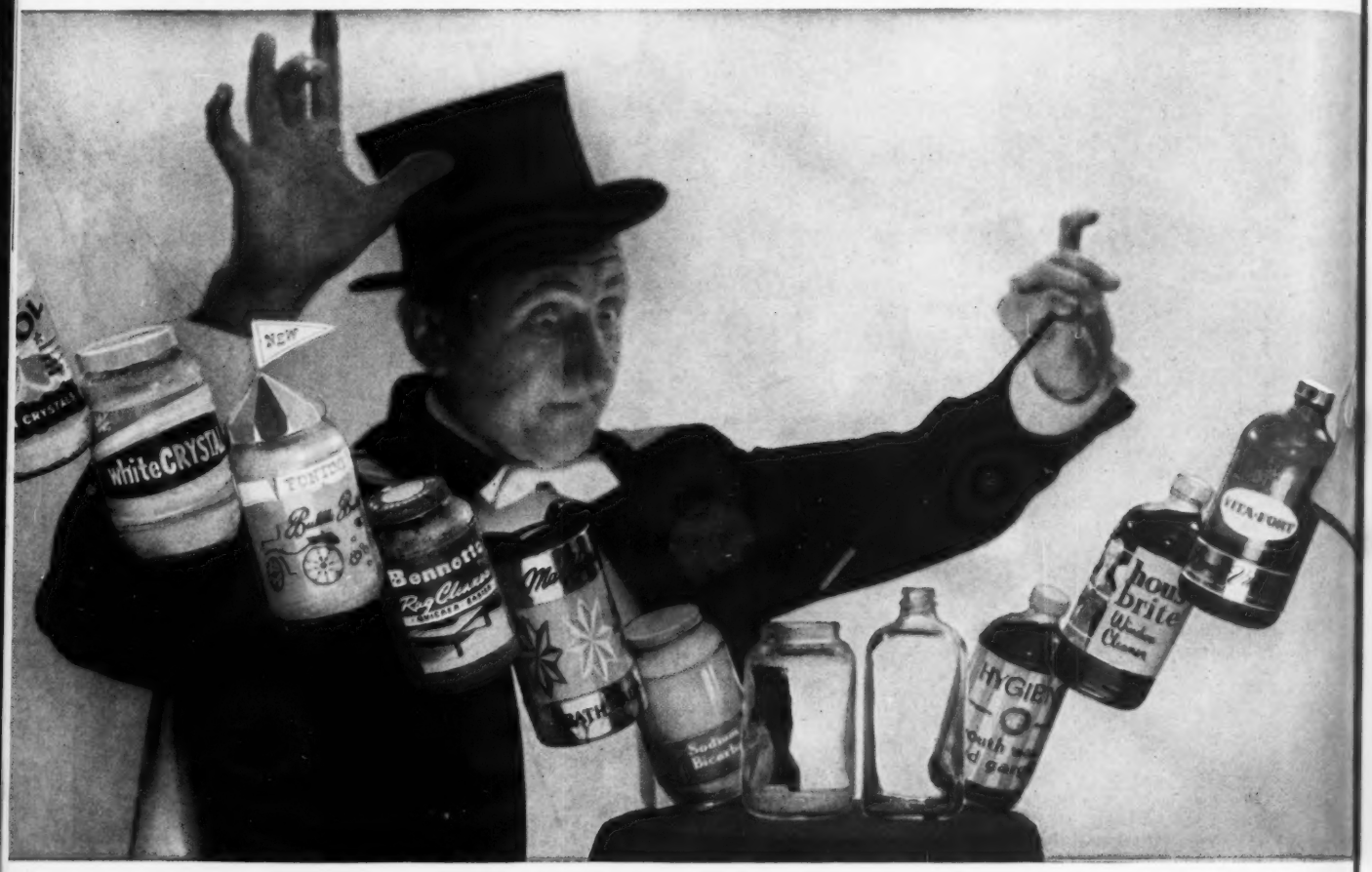
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Clayton CORPORATION

4295 FOREST PARK BOULEVARD
SAINT LOUIS 8, MISSOURI



Over 3000 stock bottles—standard closures by the score—applied Color Lettering



The magic of Owens-Illinois designers turns any stock bottle into a special container for you!

Through the magic of O-I designers, any of the thousands of stock bottles on their shelves can be turned into a special container designed *exclusively for your product.*

The glass container best suited for your needs becomes an economical, sales-attracting package . . . gives your product the selling advantages on store shelves.

Take advantage of the Owens-Illinois Complete Packaging Approach . . . the right containers, most attractive label designs, best fitments or closures, and sturdy merchandising cartons . . . plain or imprinted with your sales message.

Get the full information from your nearby Owens-Illinois representative, on how O-I containers can help in your selling program.

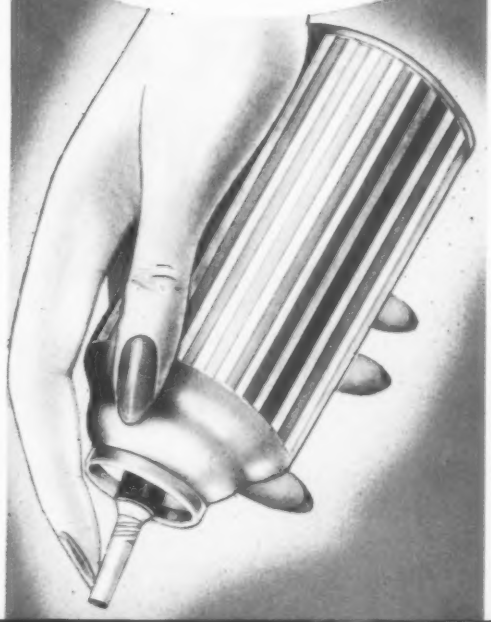
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AN (I) PRODUCT

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In the food field...

Clayton

"NOZZLE DOWN"
dispensing valves and covers



THE MOST PREFERRED FOR HUNDREDS OF MILLIONS OF PRESSURIZED FOOD CONTAINERS . . . . . the patented design of CLAYTON NOZZLE DOWN Valves! So naturally CLAYTON NOZZLE DOWN dispensing is a familiar "household custom" to countless men, women and children.

Greater convenience, greater dependability, greater acceptance. That's the story . . . the reason for the tremendous nationwide popularity of CLAYTON NOZZLE DOWN VALVES!

And their popularity is continually growing! With the ever increasing trend toward pressure-propelled dispensing for flavorings, sauces, condiments, salad dressings, spreads, frostings, toppings, shortenings and syrups . . . more and more manufacturers are relying on Clayton's vast knowledge and experience for help in developing food aerosols . . . are adopting the fast-gassing, non-clogging, smooth-dispensing NOZZLE DOWN VALVES with

FLOW RATES AND MATERIALS TO MEET SPECIFIC PRODUCT REQUIREMENTS.



FOR ALL TYPES OF FOAM OR LIQUID FLOW PRESSURIZED FOODS!



Clayton CORPORATION

CLAYTON VALVES ARE CHEMICAL AND CORROSION-RESISTANT!

Nozzle Down and Dip Tube Valves are available with color-enameled mounting cups. Highest quality corrosion-resistant interior coatings. All pressure-fill at highest speeds, assure uniform gassing and dispensing, stay intact in shipment and use. Nozzle Down Valves are completely assembled.

WRITE, PHONE OR WIRE US FOR COMPLETE DETAILS!

4205 FOREST PARK BOULEVARD
SAINT LOUIS 8, MISSOURI



WILLIAM J. FRITZ was born and raised in Trenton, N. J. Following a hitch in the Navy during World War II, Bill attended Indiana University where he received his bachelor's degree in chemistry. After graduation, Bill gained experience in both industrial sales work and quality-control testing before joining Du Pont. He came to Du Pont in 1957, and was assigned as a research chemist with the "Freon" Products Division. At present, Bill directs the use of analytical devices such as the vapor phase chromatograph and other instruments in the "Freon" Products Sales Service Laboratory at Chestnut Run near Wilmington.

"We can employ Du Pont's arsenal of analytical instruments to help our customers with their aerosol problems"

says William J. Fritz of Du Pont

"Today's most modern instruments and electronic devices are available at our labs to serve the aerosol industry," says Bill Fritz of Du Pont's "Freon" Products Laboratory. A variety of determinations and analyses can be made here on these instruments. We use these analytical tools to help our customers in their work on aerosols."

The technical facilities at Du Pont are just one of the advantages you get at no extra cost when you buy Freon* propellents from Du Pont. Loaders or marketers of aerosol products can take advantage of many sales-building services which only Du Pont offers.

In marketing, Du Pont surveys help you expand sales of your products. Through national advertising and promotion, Du Pont works continuously to build markets for aerosols, bring you a steady flow of new customers. In technical service, Du Pont's know-how and experience can help you with aerosol development or solution of production problems. In the manufacture of "Freon", Du Pont makes aerosol propellents recognized throughout the industry for their quality, performance and properties. And only Du Pont gives you virtually local delivery service from three plants in the U. S., one in Canada and a network of warehouses.

If you have a problem in any area of aerosol development, production or marketing, call or write the Du Pont office nearest you. And be sure you buy "Freon" for all your propellent needs.

E. I. du Pont de Nemours & Co. (Inc.)
"Freon" Products Division 315
Wilmington 98, Delaware

DISTRICT OFFICES

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FREON® propellents

**Freon and combinations of Freon- or F- with numerals are Du Pont's registered trademarks for its fluorinated hydrocarbon propellents*

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY



And one shall be leader... business leadership isn't an honorary degree—it's earned by doing a job better than anyone else!

Chase stands at its 29th year milestone, acknowledged leader in packaging for one reason: superior research on more difficult problems in more product classes.

PRODUCTION VERSATILITY—Ample facilities to handle oil and water base, liquid and foam products, of all types in small or large quantities. No minimum run required and no maximum limit!

INCREASED PLANT FACILITIES—Our plant is centrally located for ideal distribution, with both rail and truck facilities. We offer warehousing, drop shipping in bulk lots, direct pick-up and routing by major national truck or rail lines.

Write or Phone: **CHASE PRODUCTS COMPANY**—Maywood, Illinois

Contract fillers of AEROSOL and PRESSURIZED PRODUCTS



POISON IVY ITCH loses its fire fast in the soothing spray from a handy Crown Spra-Tainer—first and most popular aerosol package. And fast is the word for the way sales go up when products of all kinds are pressure packaged with the help of Crown, pioneer in the field. Crown is the only source of both seamless and fabricated Spra-Tainers . . . offers you five different sizes . . . has unparalleled experience in aerosol packaging. Let Crown serve you.

for cans · closures · crowns · machinery

CROWN

CROWN CORK & SEAL COMPANY, INC.
9300 Ashton Road, Philadelphia 36, Pa.

PRESSURE PACKAGING

Mojonnier Names LeBeau

Carter N. LeBeau has been appointed sales manager of Mojonnier Associates division of Kartridg-Pak Machine Co., Franklin Park, Ill., George W. Heath, division general manager announced last month. Mr. LeBeau has been sales manager of Kartridg-Pak, and continues to handle its sales in his new position.



Carter N. LeBeau

Mojonnier, a 12 year old firm specializing in aerosol packaging machinery, was acquired by Kartridg-Pak last October.

—★—

Meshberg to Europe

Philip Meshberg, president of Emson Research Laboratories, Inc., Bridgeport, Conn., is leaving this month on a four weeks trip through Italy, Germany, Switzerland, Holland, France, and England to survey markets for his company's line of aerosol valves and container components. In Germany he plans to confer with his affiliate and partner, Karl Huber of Emson Aerosols GMBH, in Karlsruhe.

Mr. Meshberg owns several international patents for metered valves and containers that are being introduced in the United States by Emson and Valve Corp. of America, Bridgeport. During his trip he will demonstrate Emson's latest products to aerosol fillers and manufacturers. Sig Was, sales manager, will be in charge of the company's operation while Mr. Meshberg is away.

—★—

Baer Lectures on Aerosols

For the second consecutive year, Jean W. Baer, representative for "Isotron" propellants in the northeast area for Pennsalt Chemicals Corp., Philadelphia, recently addressed senior and graduate students as a guest lecturer at the Massachusetts College of Pharmacy in Boston. In his address, titled "Aerosols and Pharmaceutical Spray Products," Mr. Baer outlined recent developments in the packaging and marketing of pharmaceuticals in pressurized containers and made some predictions regarding future sales in this field.

Mr. Baer demonstrated the use of various types of aerosols. He showed the class of more than 100 students the difference between aerosol foams, powders, and sprays, explaining the packaging techniques involved and the attributes of each. Mr. Baer also has been consulted concerning the college's laboratory work with aerosols.

Previously with van Ameringen-Haebler, Inc., New York, as export manager in Paris, and prior to that on the sales staff of George Lueders & Co., New York, Mr. Baer joined Pennsalt two years ago. He also has been an instructor at New York University.

—★—

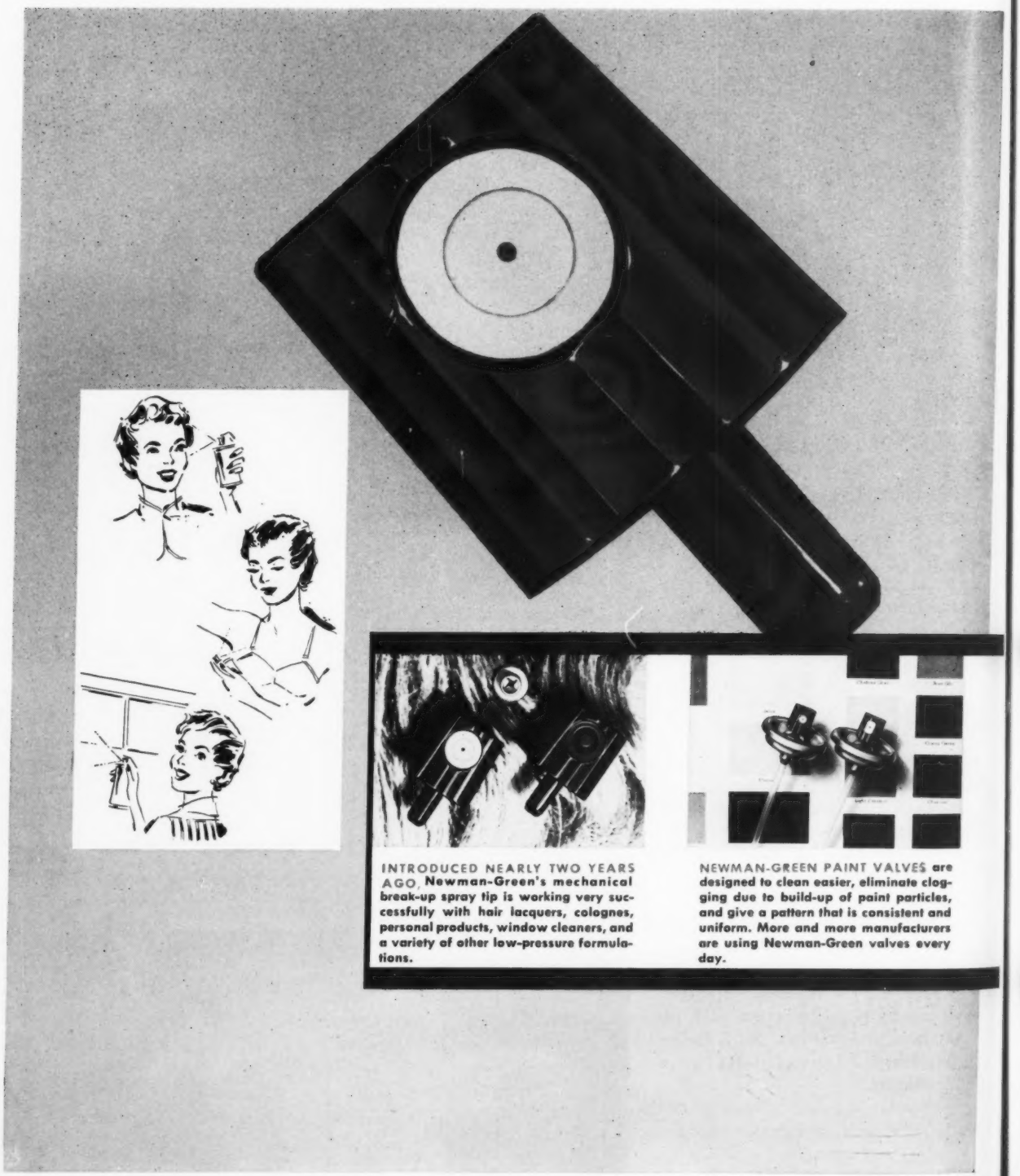
Re-Elect Dibble, Phillips

Lewis A. Dibble, president of Risdon Manufacturing Co., Naugatuck, Conn., and Rowley W. Phillips, chairman of Packers Tar Soap, Inc., Mystic, Conn., were re-elected last month as directors of Bridgeport Brass Co., Bridgeport, Conn.

Rose Bampton, left, well known soprano, who is vice-president in charge of public relations for Krylon, Inc., Norristown, Pa., and her husband, Dr. Wilfrid Pelletier, opera and symphony orchestra conductor, check details of a shipment of Krylon spray enamels bound for the American National Exhibition in Moscow, Russia. Krylon was one of 65 American companies chosen by the United States government to display their products and services at the U. S. exhibit this summer to demonstrate how America lives.



NEWMAN-GREEN DESIGN OFFERS



INTRODUCED NEARLY TWO YEARS AGO, **Newman-Green's mechanical break-up spray tip is working very successfully with hair lacquers, colognes, personal products, window cleaners, and a variety of other low-pressure formulations.**

NEWMAN-GREEN PAINT VALVES **are designed to clean easier, eliminate clogging due to build-up of paint particles, and give a pattern that is consistent and uniform. More and more manufacturers are using Newman-Green valves every day.**

TWO-COLOR TIPS AT NO EXTRA COST

Use Newman-Green Valves For Mistier Sprays, Real Quality, More Dependable Operation

The built-in quality available only in Newman-Green aerosol valves includes:

- *No small orifices drilled in metal parts.*
- *Delivery tubes swedged on—not slipped over —valve body.*
- *Spray patterns can be varied completely in seconds by changing only spray head.*
- *All metering orifices and spray heads are easily accessible for cleaning.*

In addition, the extra-plus you get from Newman-Green's two-tone spray tips (designed to blend or contrast with your label design) is at no extra cost. Such color contrasting assures quick, positive location of orifice opening and easier use of your aerosol package.

The Newman-Green valve design with built-in quality helps you cut production costs, assures better dispensing of your product with a more uniform pattern. Models are available for all types of metal or glass containers.

Always think first of Newman-Green for help in solving your aerosol valve designing, engineering and manufacturing problems. You will get both service and unsurpassed quality when you call your Newman-Green representative.



INSIST ON NEWMAN-GREEN VALVES. **You gain a competitive edge from built-in engineering quality that can't be matched in the aerosol industry. Service is prompt, and production geared for high volume.**

Newman-Green offers a complete line of aerosol valves. For latest price schedules and/or free samples, please fill and send in this coupon.

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151 Interstate Road
Addison, Illinois

Name_____ **Position**_____

Company_____ **Address**_____

City_____ **State**_____ **(Country)**_____

Intended valve application_____

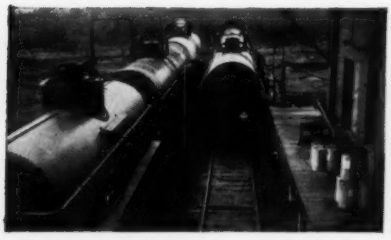
NEWMAN-GREEN *Creative Aerosol Valve Engineering*

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...and then some!

50,000 square feet, as a matter of fact, in which to meet your liquid or aerosol filling requirements. Besides ample facilities for handling your bulk ingredients, we have extensive warehousing space for the storage of your products after packaging. When shipments are to be made, our personnel and equipment are ready to move large or small orders in a hurry... and of course, we're always glad to handle drop shipping. Direct railroad sidings and truck service at our door permits our plant to serve as your warehouse... a central distributing point... saving you time... and money.







For details about our complete services in contract filling (liquid or aerosol), write, 'phone or wire...

PETERSON
Filling and Packaging Co.
HEGELER LANE • DANVILLE, ILLINOIS

Half Billion Aerosol Cans in 1959

RECORD 1959 output of 555 million pressure cans was predicted recently by Robert Hollister, aerosol sales executive of American Can Co.'s Canco Division. Mr. Hollister's estimate would be a 15 per cent increase over the 483 million units produced in 1958.

Last year's increase over the 420 million total produced in 1957 was due largely to the introduction of pressure packaged toothpaste, Mr. Hollister believes. Other products were newly adapted to aerosol packaging and contributed to last year's growth and are expected to do so in the future. These include liquid soaps, auto waxes, furniture polishes, hand creams, vitamin syrups, and flavored toppings.

Insect repellents, dessert toppings, and drugs, particularly vitamins, are expected to be the leading growth items in 1959. Cosmetics and toiletries will probably be seen for the first time in aluminum pressure cans in 1959, Mr. Hollister believes.

Probably a little more than 80 per cent of the total aerosol cans will contain non-food items. Volume leaders, according to Mr. Hollister, are hair sprays, room deodorants, shaving lather, insect killers and repellents, and paints.

Production of food aerosol cans amounted to 70 million units in 1957, to 85 million in 1958; and about 95-100 million are predicted for 1959. Flavored and whipped dessert toppings have lead the food category with other food products contributing but negligible numbers. Mr. Hollister believes technical problems which have slowed pressure packaging developments in the food field may soon be removed by new developments in both containers and product formulations.

In addition to convenience, aerosol packaged drugs and pharmaceuticals offer economy sterility, and a number of other advantages, such as painless application.

The bright view taken by Mr. Hollister is reflected in his company's recent expansion of manufacturing facilities for aerosol cans. Most recent addition to Canco's pressure can production comes from a new plant in Hamilton, Ont.

—★—

Continental Sales Down

Net sales and operating revenues of Continental Can Co., New York, for the first quarter of this year were reported recently at $236,941,000, a gain over the $240,803,000 for the corresponding 1958 period.

Net income this year was $5,928,000, or 49 cents per common share, compared with $7,092,000, or 60 cents per share, for the 1958 first quarter.

First quarter results were reported at the company's stockholder meeting last month by Gen. Lucius D. Clay, chairman, who noted that sales during the first 15 days of April were 18 per cent ahead of last year and that advance purchases of more than $15 million lifted 1958 first quarter sales.

—★—

Acrolite in New Plant

Acrolite Products, Inc., moved into a new and modern plant last month at 800 Martin St., Rahway, N. J. The move is part of a $200,000 expansion program announced recently by Murray Poznak, president of the aerosol manufacturing and filling firm.

The new plant features two pressure fill lines, air conditioned offices, a complete sprinkler system, and stainless steel mixing equipment. Currently producing aerosol products for the paint, varnish, and protective coatings industry, Acrolite plans to expand into the household, industrial, automotive and chemical specialties field. Its first offering is "Protex - A - Hand," a foam in an aerosol container for hand protection. Other components of the company's expansion program are television, newspaper, and trade magazine advertisements, the appointment of sales representatives throughout the country, and distribution in 21 foreign countries.

Acrolite also does contract filling currently in the protective coating field but, Mr. Poznak says, the firm plans to enter into contract filling for household specialties.

Recent appointments to the company include Filomena Niesen as sales promotion manager, W. F. Wallace as aerosol engineer and plant manager, and Irving Gottheimer as new products manager.

Miss Niesen was formerly with Vitamin Corp. of America and Pink Ice Co., both in Newark, N.J., and Mr. Wallace was associated with Wallace Engineering Co., New York, as president. Mr. Gottheimer also was with Vitamin Corp. of America before joining Acrolite.

—★—

New Aerosol Cap Shown

A new type overcap for aerosol containers was introduced last month by J. L. Clark Manufacturing Co., Rockford, Ill., at the National Packaging Exposition of the American Management Association in Chicago.

Trade named the "Spring-Grip," the new cap features an internal spring clip which is said to grip the can firmly yet permits easy removal. It may be applied to any aerosol can without modifying the can itself, Clark says. The company designed and developed the cap which is currently in use on Helene Curtis "Spray Net" containers.



Record Canco Sales

Sales of American Can Co., New York, for the first quarter of this year reached a record high. They amounted to $227,084,796, compared with the previous high of $220,137,507 in the first quarter of 1958. Net income also increased from $7,056,773, or 41 cents a share, last year, to $7,838,649, or 45 cents a share, in 1959.

—★—

Refillable Aerosol

A refillable aerosol cologne dispenser in one and two ounce sizes has just become available from Risdon Manufacturing Co., Naugatuck, Conn. A replaceable inner plastic coated glass bottle holds fragrance and propellant. Housed in an outer metal case, the empty bottle is easily replaced by another pressurized bottle of cologne.

The new "Vanity-Mist" dispenser comes with metering or conventional valve. Either type of valve assembly is available with "Micro-Mist" mechanical break up actuators.

The complete unit has eight parts: Cap; outer case, which separates into three sections; removable plastic coated bottle; valve assembly; actuator, which can be used in a spray dome; and a rubber pad on which the inner bottle rests. All parts, except the bottle and rubber cushion, are manufactured by Risdon.



Components making up Risdon's new refillable aerosol cologne dispenser are, clockwise: outer cap, valve assembly, plastic coated exchangeable inner bottle, outer case, and spray dome actuator. All parts shown except bottle are made by Risdon.

—★—

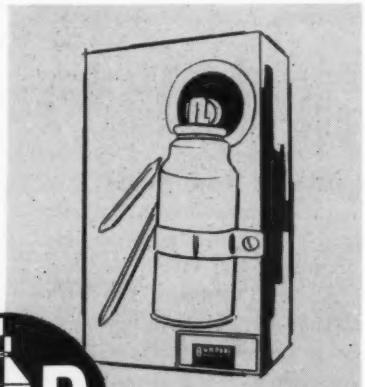
Improved Aerosol Perfumes

The range of fragrances packageable in aerosols without modification of the original perfume has been greatly increased, claims Sun-Lac Inc., 274 Lafayette Street, Newark 5, N. J. This improvement in compatibility of perfume oils with propellants is accomplished by a novel approach to proportioning the fluorinated hydrocarbons with alcohol and other ingredients of the system and especially by new formulating procedures.

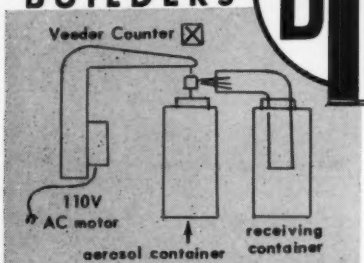
As a result of the new formulating method combined with a simplified filling system Sun-Lac claims to have developed an "ultra low pressure" package offering improved safety for glass packaged aerosols. Pressure in the new type package ranges from 10 to 12 pounds per square inch at 70°F. This compares with 13 to 15

(*Turn to Page* 199)

AEROSOL DISCHARGE RATE DETERMINATION APPARATUS



BUILDERS B P PRODUCTS



Sprays automatically for 15 seconds at 2 minute intervals.

You should know the discharge rate for each valve and actuator you are considering.
If the product is used up too quickly or too slowly, due to an improper valve or actuator, the consumer may not reorder.
Know how many times the actuator will be pushed to expel the contents. Also can be used as an automatic spray unit for checking odorants, deodorizers, insecticides, etc.

•

Operate all tests with same temperature and number of actuations. Weigh can before and after, this will give you the amount used by each valve or actuator tested.

PRICE **$46.50**
Model with Electric Counter **$56.50**

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Seamless impact extruded aluminum containers for the aerosol industry

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No crimps, no solderings, no seams, no cements, NO LEAKERS!

Maximum resistance to pressure: distortion of the container's bottom occurs at over 250 p.s.i.

Minimum weight: a 12 oz can weighs 1.41 ozs, a 6 oz can weighs .89 ozs.

Full range of sizes to meet any requirement of the aerosol industry: wide choice of diameters, lengths and shapes.

Standard 1" opening to fit any normal cup-type aerosol valve.

Perfect decoration of the cans; base-lacquering in any color plus lithographic printing in up to four colors.

All containers may be internally coated with special lacquers if they are to be filled with corrosive products.

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AEROSOL



PACKAGING

may be the propelling force that your sales need!

You've seen many aerosol products "take off" on a sharply rising sales curve. Hair sprays. Colognes. Room deodorants. Today's new pharmaceutical aerosols. And hundreds more. Perhaps *your* product has similar potential—and needs only the propelling force of aerosol packaging to start sales zooming for you.

Would your product be "better" as an aerosol?

If it can be sprayed, brushed on, dusted or daubed, your product is a likely candidate for aerosol packaging. As a leading producer of aerosol propellants—the "Genetrons"—General Chemical will be glad to help you get started.

Help in making and marketing

General Chemical offers many helpful services to present and prospective aerosol marketers. For example, we can tell you about promising new aerosol formulations developed in our "Genetron" laboratories . . . and can assist in the development of *your own* new aerosol formulation. Our specialists will study your formulation requirements and help you determine the proper "Genetron" propellant compatible with your product, its container and its uses. We will also be glad to put you in touch with highly capable contract fillers in all parts of the country who will work with you from the planning and testing of your product through to commercial filling—without any outlay on your part for plant or equipment.

General Chemical services include:



New Product Ideas



Technical Literature and Market Data



Technical Assistance with Product Development and Formulation

All these services are readily available. Taking advantage of them may enable *you* to make a good product a "better" one . . . send it rocketing to higher sales.

For further information—or if you would like to arrange for a special presentation—write today to "Genetron" Dept., General Chemical Division, Allied Chemical Corporation.

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AEROSOL PROPELLANTS

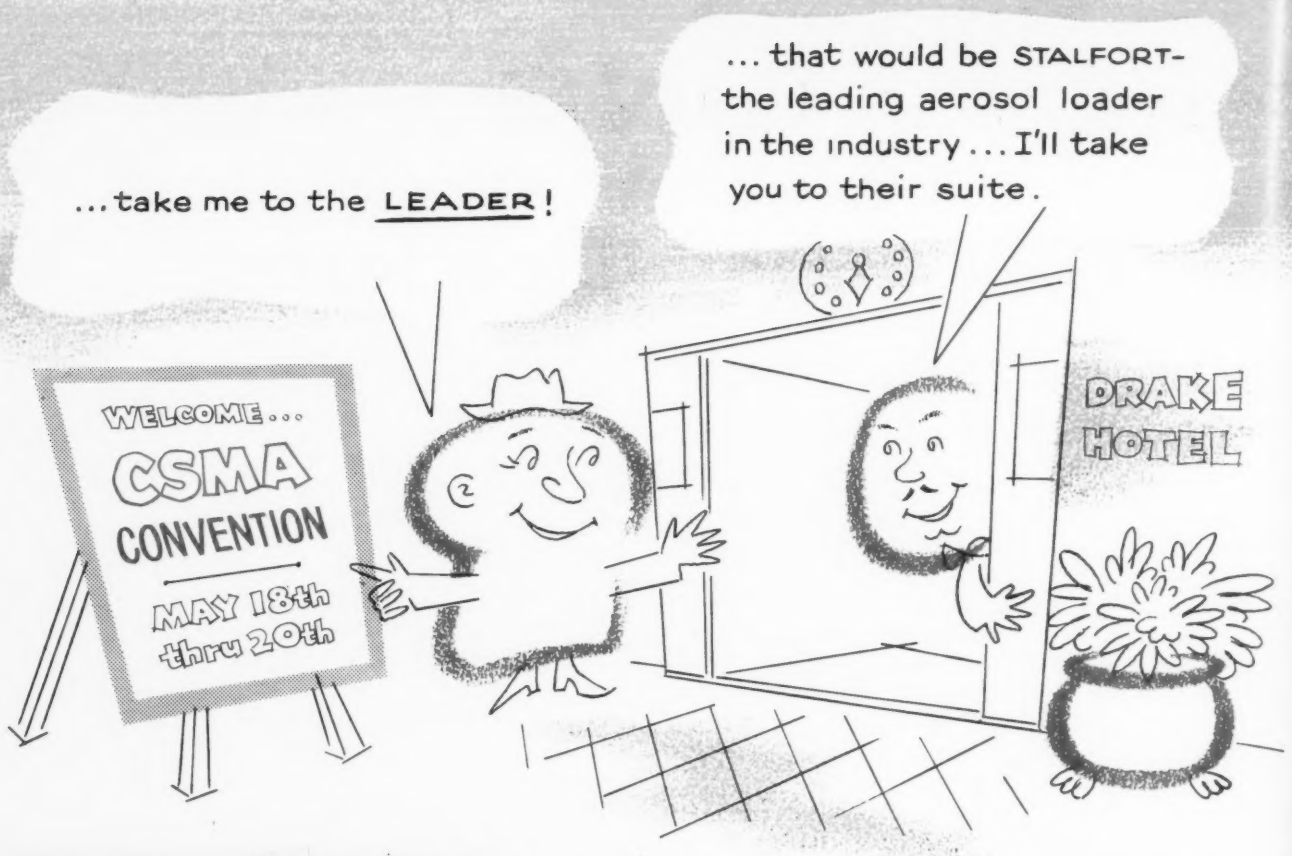
Putting the "push" in America's finest aerosols

Basic to America's Progress

Allied Chemical

GENERAL CHEMICAL DIVISION

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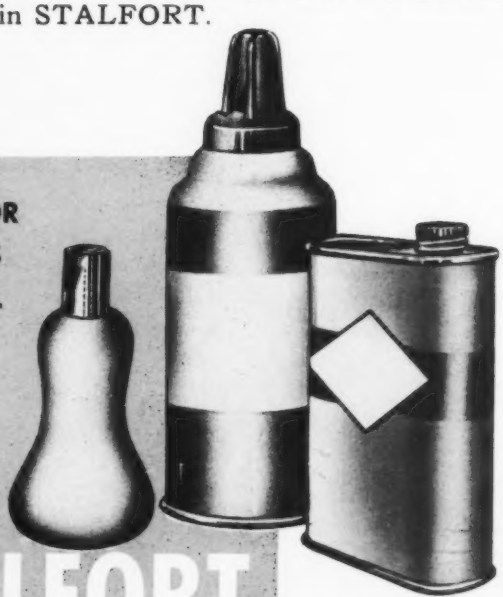
THE BIGGEST BRANDS ARE STALFORT PACKED

During your stay at the big CSMA Convention in Chicago, you are cordially invited to visit us at our Suite in the Drake Hotel. TRUST YOUR TRADE-MARK TO STALFORT. Be sure of an Aerosol filler that will do justice to the quality of your product. Do what the great brand names have done. Safeguard the consumers' faith in your product—by putting your faith in STALFORT.

NOW IN OPERATION: A completely glass-enclosed, sanitary, all-stainless Aerosol filling line exclusively for pressurized FOOD products. *AND:* Automatic filling lines with an output of more than 150,000 units per shift.

If your product is sold in aerosol or conventional containers, write, phone, or wire for complete information.

LIQUID OR POWDERS IN METAL or GLASS



JOHN C. **STALFORT** & SONS, INC.

PLANT: Arbutus, Baltimore, Maryland
OFFICE: 321 W. Pratt St., Baltimore, Maryland

(*From Page* 194)

pounds per square inch in the original uncoated glass bottle and 20 pounds in coated glass pressure packages.

Sun-Lac invites manufacturers of "problem fragrances" to submit these for sample aerosol packaging by its new system.

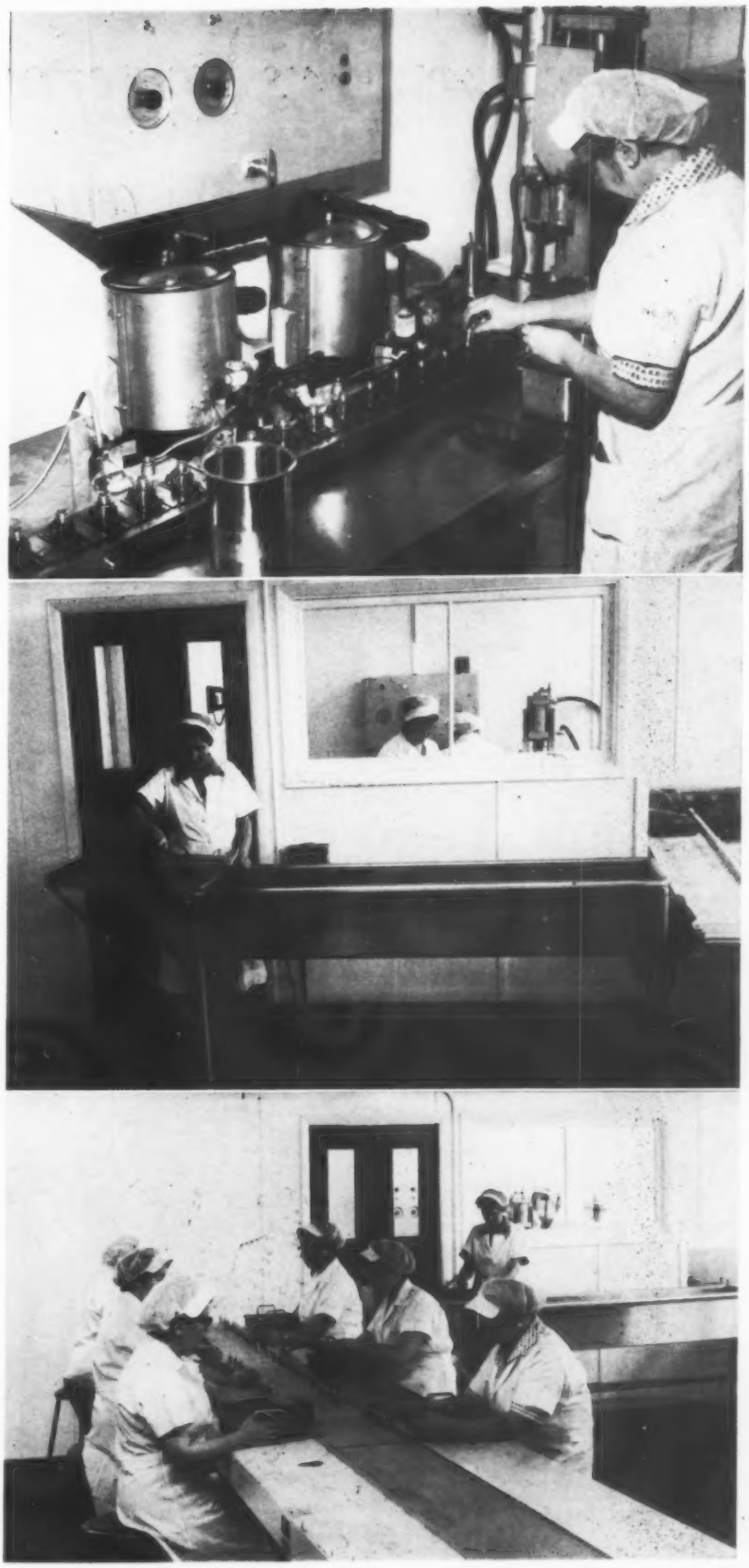
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Medicinal Aerosol Growth

Dermatological pharmaceuticals and medicinals represent the latest major aerosol advance, according to H. R. Shepherd, president of Aerosol Techniques, Inc., Bridgeport, Conn. A substantial part of ATI's laboratory activity is now being devoted to dermatologicals, with Norman Orentreich aiding in clinical evaluation and consultation. ATI's research division is said to believe that such aerosol foam and spray preparations offer important market potential.

Seven new products have already been developed in this category, and several are already being manufactured for leading marketers with excellent consumer response, Mr. Shepherd stated. Acne foams and steroid sprays are among the new additions to aerosol dermatologicals, joining established poison ivy sprays, athlete's foot sprays, anesthetic sprays, analgesic sprays, and spray-on bandages.

Dr. Orentreich noted that the aerosol is almost ideally adapted to effective and easy dermatological application since the foam or spray can get into less accessible and hairy areas, the user does not have to touch the affected areas, broad areas can be covered readily, and there is economy in extensive dispersal.



Photographs, at right, taken at new pharmaceutical center of Aerosol Techniques, Inc., Bridgeport, Conn., show in picture at top, filling and crimping being done by semi-automatic air-conditioned process. Newly designed equipment was required for production of pressure packaged pharmaceuticals for inhalation. In center photo is shown all-stainless steel water bath tester. Bottom picture shows inspection and assembly operation.

The answers to aerosol valve needs

and perfected daily

THIS MEANS ADDITIONAL PRODUCTS



This new Precision spray valve, in addition to its slanted finger rest has an imprinted arrow in a second color which immediately shows the direction of flow for instant and accurate spraying.



A Precision stream spout for dispensing any product, regardless of viscousity, that will pour. Currently most toothpaste and syrup manufacturers, are using this practical and attractive unit.



● **At Precision there is a continuing program of research and development, for each day brings new products to be packaged in aerosol containers. The success of aerosols, in the market place, is based on functional design and attractive appearance for these two go hand in hand to improve dispensing and increase sales.**

PRECISION VALVE CORPORATION

need are being developed

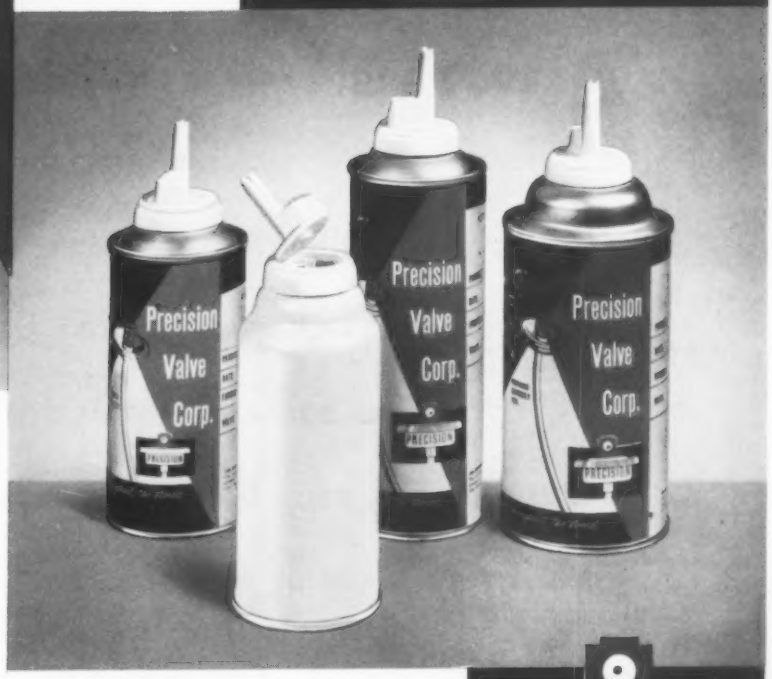
daily at Precision . . .

DUCT SALES FOR YOU!





This graceful spout has proven to be a profitable way of dispensing pharmaceuticals and cosmetics. It is quite often combined with Precisions metering valve which dispenses a pre-determined amount with a touch.



Upside down spout, designed for toppings, is far simpler to use than ordinary spouts and in addition is far easier to keep clean. Just lift and hold under the faucet.

Perhaps your product, whether it be dispensed as a foam, a spray, a drop or a stream, should be adapted to an aerosol package. Aerosols have proven, in almost every case, to increase sales because of appearance, economy and simplicity of use. Precision engineers will be most happy to talk with you about your particular needs.



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Aerosol growth has been both rapid and satisfying, but nevertheless the product of well-planned, exacting design. Valuable time can be gained through a proper program approach. Whether your Aerosol problem be technical, promotional, diversification or sales, qualified advice and guidance will prove most beneficial.

To assure success in this fast-growing and lucrative field, may we suggest that you investigate the services of a competent Aerosol staff.

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METERED SPRAY AEROSOL SPECIALISTS

Exclusive, specially designed equipment for fast production of all metered dispensers.

RESEARCH to develop the right product

QUALITY CONTROL to make the package marketable

PRODUCTION to handle small and large volume of all type Aerosol products

Make it a point to talk to "AERO-CHEM" first

quality AEROSOL PACKAGING service.

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GARD. A COMPLETE AEROSOL SERVICE

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Cold or Pressure Filling
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FOR FOOD, DRUGS, PAINTS AND CHEMICAL SPECIALTIES

GARD now offers the most complete, most modern filling facilities in the industry for all aerosols from food to paint. Minimum production runs — as low as 1,000 cans to 1,000,000 and up! Air-conditioned, humidity controlled throughout.

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Scranton Aerosol Packaging

NEWEST FACILITIES:
The most modern in the industry, with consistent quality control. Production: 45,000 units per shift.

NEWEST PROPELLANTS:
Freon, isotron, genetron, ucon, and butane are some of many available. Highest quality guaranteed.

PERFECT DISTRIBUTION POINT:
40,000,000 consumers within 250 mile radius. Focal pt. of Fed. Hghwy. Program. 100,000 sq. ft. of storage facilities.

WRITE TODAY FOR FULL PARTICULARS:

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FLORIDAS' OLDEST CONTRACT PACKAGER

Your product can be packaged in America's fastest growing market AT NO COST TO YOU. The freight saved usually pays the bill.

COMPLETE FACILITIES FOR MANUFACTURING, PACKAGING, STORING, AND SHIPPING LIQUIDS, POWDERS, CREAMS.

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or our specialists will help compound, package or label

aerosols, toiletries, tablets, liquids, food products, etc.

60 years' experience. Quality controls. For details with no obligation, write or call

J. D. GILBERT, President
W. T. RAWLEIGH CO.
Freeport, Ill.

Complete AEROSOL SERVICE

Small Runs Solicited

Insecticides, Deodorants, Tooth Paste, Shave Cream, Cosmetics, Toiletries, Household & Industrial Products, Powders, Colognes, Plastic Sprays, etc.

• Experts in formulation and development • strict quality control • ample storage • pressure and "COLD FILL" lines • samples and experimental work at no charge • special plan for companies requiring national distribution.

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274 Lafayette St. • Newark 5, N. J.
MArket 3-7727

AEROSOL PACKAGING *to fit* **YOUR PRODUCT**



• No minimum run required and no maximum limit! Rigid quality control is maintained on all production, contract filling or custom packaging.

CHASE PRODUCTS CO.
Maywood, Illinois

AEROSOL CONSULTANTS

Reed Research Corporation

Now offering a Custom Filling Service

A complete custom filling section specializing in carefully controlled runs has been added to the extensive research and development facilities at Reed Research. Capable of filling all types of standard aerosol containers with the propellant best suited to the product.

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Mill Street • Shelton, Conn.
The Safest Path To Successful Products

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of PA., INC.
AEROSOL FILLING
for Private Label Marketers

Also Liquid Filling

Complete research and laboratory facilities
Constant quality control
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PROGRESSIVE
AEROSOL FILLER
Compare our
★ PRICES
★ QUALITY
and CONFIDENTIAL SERVICE
W E S T E R N
FILLS *ALL* PRODUCTS
WESTERN FILLING CORPORATION
6423 BANDINI BLVD., LOS ANGELES

Pennsalt Sales Increase

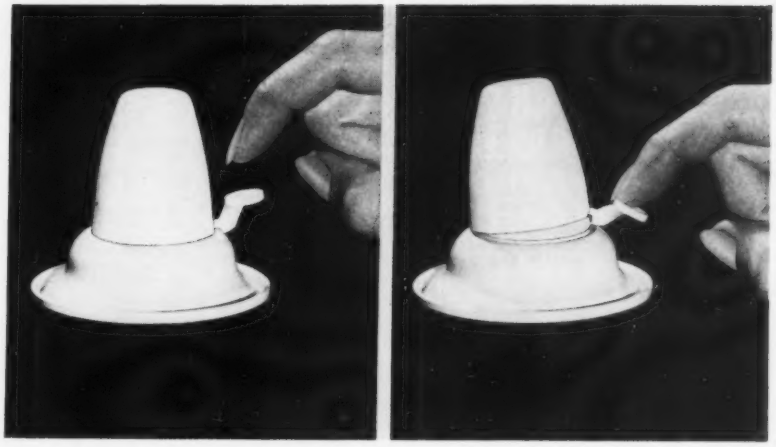
Net sales in the first quarter of this year for Pennsalt Chemicals Corp., Philadelphia, increased to $20,965,000 from $18,495,000 in the corresponding quarter a year ago. Net income amounted to $1,217,000, or 95 cents a common share, compared with $741,700, or 58 cents a share, in 1958.

—★—

Safety Group Hears Mina

Dr. Francis A. Mina, technical director of Lodes Aerosol Consultants, Inc., New York, spoke on aerosols at the 29th Annual Safety Convention and Exposition last month sponsored by the Greater New York Safety Council. Representing the Aerosol Division of the Chemical Specialties Manufacturers Association, Dr. Mina's talk, titled "The Pressure's On," reviewed the development and growth of aerosols, their safety record, and recommendations for procedures to continue this safety record in view of the increased public acceptance of aerosols.

Dr. Mina also showed the motion picture, "The Magic Button," produced by CSMA.



New "E Z Lift" button, which automatically removes overcaps of aerosol containers, has been introduced by Super Whip Valve Co., Chicago. Available with caps of stock design or private style molds, the device is said to eliminate gas or product loss, or valve damage that may be caused in overcap removal. Super Whip Valve Co. also produces a complete line of foam and liquid flow valves.

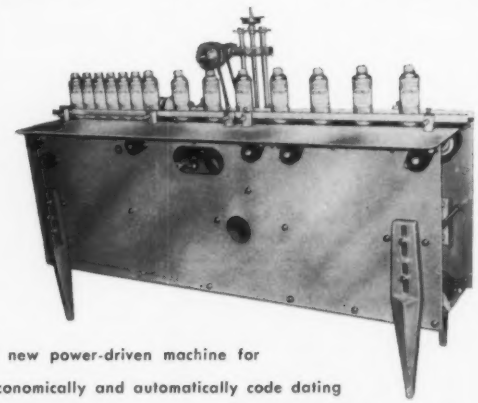


National Spray Can gets nation's newest propellants. A tankful of new UCON Brand Propellants is welcomed at the Brooklyn plant of National Spray Can Filling Corporation by Harry Richards (right), co-owner. National Spray Can is one of the East's fastest growing filling firms. It handles runs of any size, and produces all types of aerosols—including insecticides, perfumes, cosmetic preparations, plastic sprays and antibiotics. Shaking hands with Mr. Richards in the photo above is E. E. ("Rusty") Husted, of Union Carbide Chemicals Company. Harry Schneider, co-owner of National Spray Can is at the center.

For information about America's newest aerosol propellants, write: UCON Propellants, Union Carbide Chemicals Company, Division of Union Carbide Corporation, 30 E. 42 St., N. Y. 17, N. Y.

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Du Pont Aerosol Management Conference

THE First Aerosol Management Conference held by the Freon Products Division of E. I. du Pont de Nemours & Co., took place April 16-18 in Wilmington, Del. Theme of the meeting was "The Challenge of the Next Decade" with the prediction that aerosol production by 1970 will be about two billion units, four times current figures. More than 160 people attended the conference by invitation as part of the company's direct sales-service to aerosol loaders.

Crawford H. Greenewalt, Du Pont president, began proceedings with welcoming remarks at a luncheon at the Hotel Du Pont, April 16. The first of the three conferences followed that afternoon with Thomas D. Johnson, Jr., assistant director of sales for the "Freon" division, as lead-off speaker talking about the "Profile of Aerosol Management." Morning and afternoon conferences were held Friday, April 17, with speakers and their topics including: Charlotte Montgomery, *Good Housekeeping* magazine columnist and consultant, "Changing Needs of Your Number One Customer—The American Homemaker;" John W. Straus, merchandise administrator, Macy's, New York, "Selling Aerosols in Tomorrow's Market;" John A. Zapp, director of Du Pont's Haskell Laboratory of Industrial Toxicology, and Frank W. Blodgett, "Freon" products division, "Contribution to the Future—'Freon-C318';" James Q. du Pont, public relations department, Du Pont Co., "Pattern for Success;" James H. Garvin, treasurer's department, Du Pont Co., "How Du Pont Measures Its Performance;" and Carl S. Oldach, director of sales, Freon Products Division, "Summing Up."

Saturday morning, April 18, attendees had a choice of tours of Du Pont's manufacturing and laboratory facilities or the Hagly Museum and Longwood Gardens, or golf at the Du Pont Country Club. After a luncheon Saturday, the conference adjourned. Du Pont plans to conduct similar conferences of this nature in the future.

—★—

New VCA Price List

A new price list has been prepared by Valve Corp. of America, Inc., 1722 Fairfield Ave., Bridgeport, Conn., for its line of basic valve components, a variety of operators, stainless steel inner containers, "Mist-Tops," buttons, and other units. Included in the listing are prices per order of 25,000 for metered valve components, and per order of 50,000 for one-inch opening can valve and 20mm glass bottle valve components.

The price list is available upon request or additional information may be obtained from the company's home office or sales offices, 10 East 49th St., New York, and 7634 North Rogers Ave., Chicago.

—★—

Avon Income Increases

Net income of Avon Products, Inc., New York, and its consolidated subsidiaries increased in the first quarter of this year to $2,022,339, or 63 cents a share, from $1,386,070, or 43 cents a share, in 1958. Net sales rose to a record $25,883,560 from $21,751,966 in the corresponding period a year ago.

—★—

Babbitt Quarter Profit Up

Net profit of B. T. Babbitt, Inc., New York, and its consolidated subsidiaries, except the Brazilian subsidiary, for the first quarter of this year was reported at $204,676, a 29 per cent increase over the $159,046 in the same period in 1958. Net profit per common share after preferred requirements was 16 cents, compared with 13 cents last year. Babbitt had a net loss of $92,427 in the first quarter of 1957. Marshall S. Lachner, president, also reported that sales for the 1959 quarter were 19 per cent ahead of last year's.

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Meet VCA at the 45th Mid Year Meeting, The Drake, Chicago, May 18 —20th.

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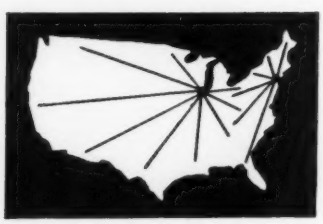


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"Ucon" Delivery System

A delivery system for "Ucon" propellants was recently set-up by the fluorocarbons division of Union Carbide Chemicals Co., New York, with the establishment of centers at Hillside, N. J., and Whiting, Ind., E. E. Husted, sales manager for "Ucon" announced last month. Deliveries are now being made to aerosol fillers and marketers throughout the nation.

A fleet of tank trucks is operating out of the two centers with other trucks delivering direct from Carbide's new fluorocarbons production plant in Institute, W. Va.

Under the new system several "firsts" were reported for the delivery of "Ucon" propellants. The first tank car shipment of the propellant was made to Peterson Filling & Packaging Co., Danville, Ill.; first shipment in the south was made to Aerosol Corp. of the South Memphis; and first shipments were made in the following states to these companies: Ohio, Sprayon Products, Inc., Cleveland; Pennsylvania, Thomasson of Pennsylvania, Inc., Norristown; New Jersey, Sun-Lac, Inc., Newark; Massachusetts, Armstrong Laboratories, Boston; Connecticut, Power-Pak, Inc., Bridgeport, and Aerosol Techniques, Inc., Bridgeport; Maryland, Stalfort Pressure-Pak, Inc., Baltimore; and New York, National Spray Can Filling Corp., Brooklyn.



William I. Lang, left, southwest regional sales manager for Crown Cork and Seal Co., Philadelphia, was honored during the company's regional sales meeting in Dallas earlier this year for his more than 35 years of service with Crown. S. V. Tuttas, vice-president—sales, presents Mr. Lang with a ruby-studded gold lapel pin in recognition of his service.

—★—

Bon Ami Loss Higher

Bon Ami Co., New York, reported a loss of $990,721 in 1958, compared with a net loss in 1957 of $950,683. In the company's annual report, R. Paul Weesner, president, stated that $624,911 of the 1958 loss was non-recurring. He claimed that: $650,000 worth of Christmas sales kits had to be disposed of as distress merchandise resulting in a loss of $486,303; releases from management contracts caused a $67,000 loss; and manufacturing and administration economies, put into effect last year were too late to reflect a change. Mr. Weesner also said that changeovers in the design of the cleanser can, prepaid television spot commercials, and advertising fees were charged heavily in 1958.

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Sprayon now packaging with new UCON Brand Propellant. John G. Ellis, President of Sprayon Products, Inc., Cleveland, turns the valve admitting to storage tanks 35,600 lbs. of UCON Propellant 12—newly arrived from Union Carbide Chemicals Company. At left: CARBIDE'S E. E. ("Rusty") Husted. Sprayon contract-fills for many industries, markets its own products, makes its own valves. "Our new filling lines can handle largest or smallest runs with remarkable economy," says Mr. Ellis.

For information about America's newest aerosol propellants, write: UCON Propellants, Union Carbide Chemicals Company, Division of Union Carbide Corporation, 30 East 42nd Street, New York 17, New York.

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All Colton-Hope machines will be engineered and manufactured in the Michigan plants of Arthur Colton Company. The combined facilities and experience of the two great pioneers will further expand the special applications and engineering services always provided by both companies. Sales and service will be handled by an augmented Colton staff.

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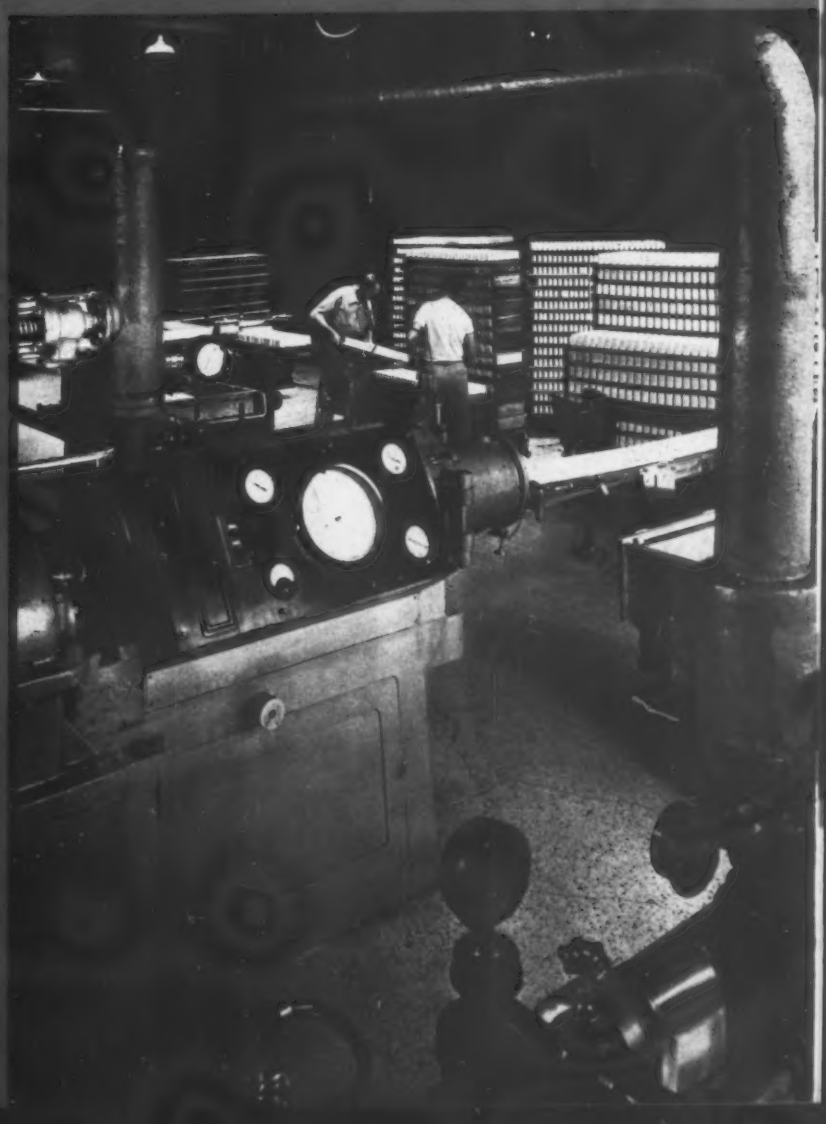
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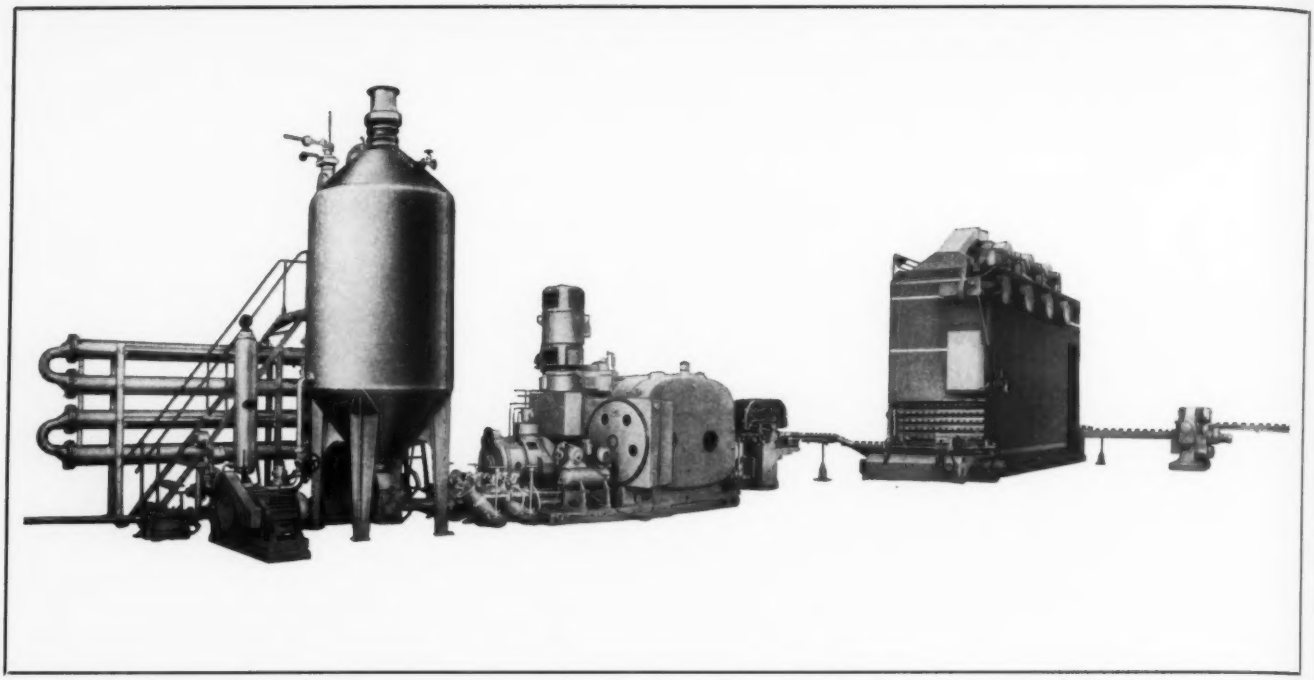
Products and Processes

New Patents

Bulletins and Equipment



One of a battery of mechanical freezers turning out bars of "Ivory" soap at Procter & Gamble plant. Liquid hot soap first enters high-speed mixer (at right), is then sent by overhead pipe to chilling machine, is extruded and cut. See article on Cooling: Page 213.



Photograph of a "SAIX-PISONI" Automatic type plant for the continuous production of plodded soap

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We wish to mention that the soap of 62% F.A. produced by your plants contain their natural water percentage.

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Advantages:
• Absolutely no changes, unless desired, in fatty acids and moisture percentages between the hot liquid soap fed into the plant and the resulting extruded continuous bar • Soaps crystallized up to 100% in "Beta Phase," consequently of excellent lathering characteristics • The plant requires but little cooling water at temperatures between 15°C. and 30 C. according to the soap quality. • One man can operate the plant • Maximum economy in space. No scraps at all; The plant is easy to operate and needs but a minimum maintenance. • No distortion or twisting of soap billets during storage. Automatic perfuming device.

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Toilet Soap Cooling

A review of the advances made in soap cooling, with particular emphasis on post World War I developments. Continuous processing the aim.

SOAP cooling techniques remained basically unchanged for many centuries until before World War I when a flock of patents appeared attempting to modernize this phase of soap production.

In a survey of soap cooling systems presented last year at a one day symposium on soap manufacture in Marseille, France, L. Gontard pointed out that since time immemorial the slow cooling of soap has been one of the professional tenets of the soap boiling fraternity. It produced a soap of a beautiful grain forming lovely moire patterns of crystallization at the cut surfaces, which were the pride and joy of the production man.

The crop of patents issued in the second decade of this century were the first fundamental attempts to reduce time and labor spent on soap cooling and to cut the amount of scraps formed in the process. The first of all these inventions which lent itself to continuous processing originated in Belgium. It called for two pairs of steel cylinders, through which a stream of cold water was circulated. The liquid soap was conveyed to the upper pair of cylinders by means of a hopper. From the lower cylinders the soap was removed by scraping knives. It was obtained in ribbon form. The importance of this process (systeme des Cressonieres) was its adaptation to the continuous band driers used in toilet soap plants. Various attempts have been made to link this installation directly to a soap plodder but results with a 63 per cent fatty acid soap were disappointing.

With one exception, none of the other numerous cooling processes put forward during the past half century assumed any industrial importance according to M. Gontard. The cooling presses by Jacobi found world wide acceptance after World War I. Several engineering firms specialized in this type of equipment and perfected in turn plates and frames and the means of locking them. The Jacobi soap cooling press constituted the first true departure from ancient cooling practices according to M. Gontard.

Soap production benefitted from the advent of the Jacobi system in a number of ways: Economy in plant space; shortening of the processing cycle; reduction of scrap from 20 to 30 per cent to about seven to eight per cent; slight improvement in color, clarity, firmness and translucency. Some production men, including E. T. Webb, lay great stress on this gain in translucency and general appearance due to rapid cooling. These improvements are probably caused by modifications in the crystallization of the soap (shorter and finer fibers).

In spite of the advantages cited several problems remained: distortion of soap bars in drying; poor foaming properties of soap derived from fat charge containing less than 20 per cent coconut oil; excessive hardness of soap from charges high in stearic content. Such soap is so brittle that it requires special drying to regain sufficient plasticity to permit anything approaching normal stamping.

Other batch cooling processes developed during this period received little attention, M. Gontard reported, because the eyes of the soap industry were already focused on continuous processing of soap.

Mills Soap Cooling Unit

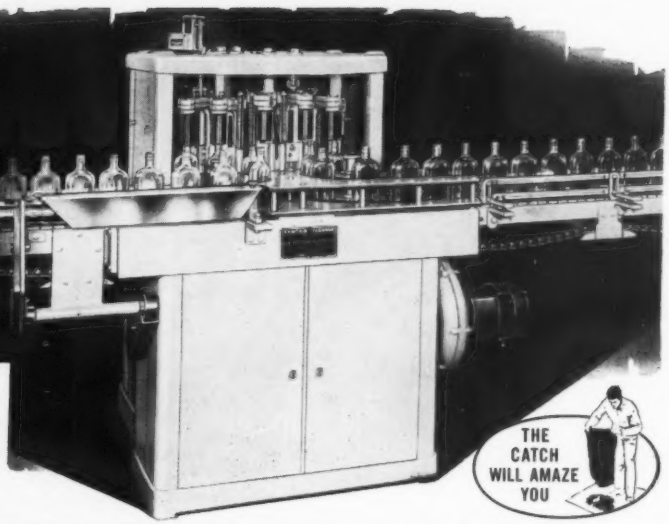
V. Mills of Procter & Gamble Co. conceived what was probably the first soap chilling process for incorporation in continuous soap making, M. Gontard believes. The Mills patent was granted in 1942. The cooling chamber in this installation is essentially a modified version of the "Votator" used in the packaging of shortening. Mills' process is used mainly in the manufacture of floating soap.

In the Mills system liquid soap is taken from a storage tank by a high pressure pump and forced over a heating unit which raises the temperature of the soap to 200°C under 18 kilos/cm² pressure. The soap is then sprayed into an expansion chamber. Here the moisture content of the soap is reduced to 20 per cent and its temperature to about 105°C. The concentrated

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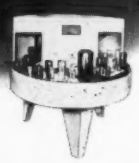


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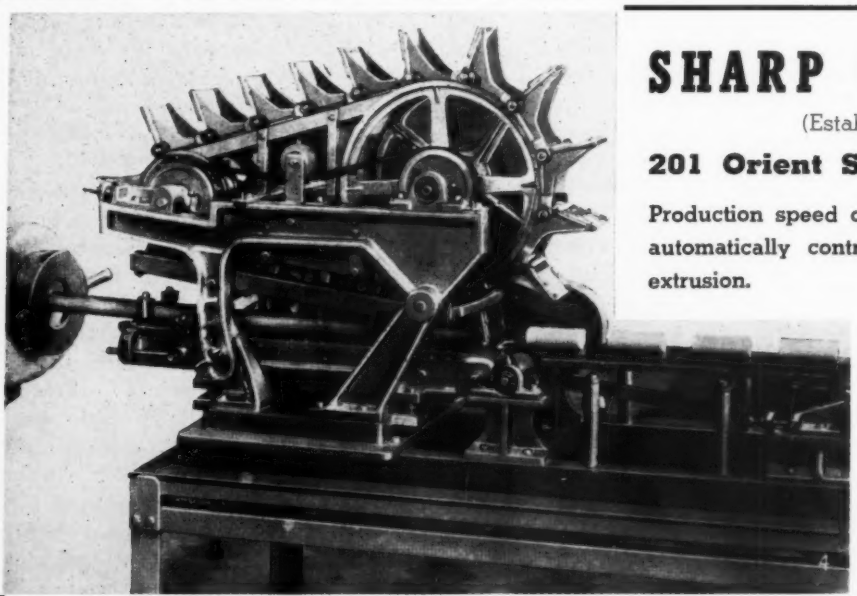


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*Patented

hot soap collects at the bottom of the chamber. It is taken up by a pump and forced into a continuous mixer where perfume, antioxidants, etc. are addded. Enough air to lower the density of the finished soap bar to 0.8 is added at this stage. From the mixer, the soap goes to the cooling unit which resembles a "Votator" cell. Here the mass is rapidly cooled by circulating water. The cooled soap is then conveyed to a mixing apparatus where it is vigorously stirred by a system of revolving paddles and fixed baffles. Finally the soap passes through a cone shaped press and is extruded in the form of a continuous bar of the desired diameter. The extrusion temperature is still fairly high: between 60 and 70°C. The bar is then cut; the pieces are refrigerated and packaged.

Apparently Mills was the first to have put into practice a continuous cycle of soap cooling. But continuity was not the only aim of his invention. One of the main claims in his patent covers the production of a soap chiefly consisting of the beta-phase, characteristic of milled and plodded soaps, rather than of the omega-phase typical of soaps cooled in frames or presses. The essential prerequisite for the formation of the beta-phase is agitation of the soap mass at a temperature and moisture level at which this phase is stable. According to Mills, the critical temperature below which the beta-phase is more stable than the omega-phase varies with the composition of the soap. He suggests 71°C for a soap containing 20 per cent coconut oil, 80 per cent tallow, and 20 per cent moisture. A higher moisture content lowers the critical temperature.

Mecchaniche Moderne Plant

Although most recent among modern systems, the Mecchaniche Moderne process must be mentioned at this point because its principle is close to the Mills method. This process utilizes the "Saix" apparatus. Essentially, this installation consists of a storage tank followed by a filtration apparatus; and the "Saix" cooling unit itself, which is composed of the following parts: a) A cylindrical static jacket which is externally cooled by water and which has a take-in for the liquid soap and an outlet for the cooled soap. Inside this jacket is a rotating water cooled cylinder, equipped with a system of scrapers and cams. Their movement combined with the revolutions of the cylinder, draw in the liquid soap just like a suction pump.

b) A mixing-homogenizing unit featuring perforated discs which fulfill the same purpose as the turning paddles and fixed baffles of the Mills unit.

c) And, finally, a plodding cone which extrudes the soap bar.

The liquid hot soap from the storage kettle is sucked directly through the filter and is conveyed to the hollow hoop (between cylinders) where it is chilled by the action of both cylinders, which are cooled by water at 18°C.

The cooled soap in paste form is then forced through the perforated discs and conveyed to the plodder. When the installation is used to make concentrated soap an arrangement similar to the Mills concentrating unit is employed. Such an arrangement consists of a high presure pump, a heating unit to raise the soap temperature to 180 to 200°C (for 70 to 72 per cent fatty acid soaps); and a spray chamber.

Mazzoni Process

The Mazzoni process for the continuous cooling and drying of soap has developed in spectacular fashion during the past 12 years, Mr. Gontard explained. This system is based on the spraying of hot soap under vacuum. Part of the moisture evaporates through the heat of the product when it enters the chamber. The amount evaporated depends on the entering temperature, which can easily be adjusted by a heating device. The temperature of the soap leaving the spray chamber depends upon the absolute pressure prevailing in the chamber, which is also easily adjusted.

The Mazzoni soap making process is fully described in an article by C. Mazzoni published in the March, 1959, issue of *Soap and Chemical Specialties*. In M. Gontard's opinion, Mazzoni's system of cooling and drying under vacuum soap of 70 to 72 per cent fatty acid content offers considerable advantages. In both the Mills and Saix system the soap must be heated to 180 to 200°C which requires steam pressure of 20 kilos/cm². The Mazzoni process requires heating only to 110°C. If the soap is to be dried only slightly, reheating can be entirely eliminated, provided the soap has a temperature of 85°C. Furthermore processing under vacuum removes all risk of changes in the soap during processing, according to the author.

At this time the soap industry uses the following cooling methods: cooling in frames of various types; cooling presses; systems based on chilling by circulating water followed by amalgamation and plodding; and a process based on release of liquid hot soap under vacuum.

The new systems, and particularly the vacuum process, are rapidly replacing the older methods based on frames and presses. Construction of cooling presses has practically stopped and presses of recent construction can be picked up at bargain prices, M. Gontard reported.

In the author's opinion the growing popularity of the system calling for atomization of hot liquid soap under vacuum is based on the following benefits: Economy in space; shortening of the processing cycle; complete elimination of scrap; continuity of the process up to the milling stage and easy adaptation to complete automation: improvements in the final product including better resistance



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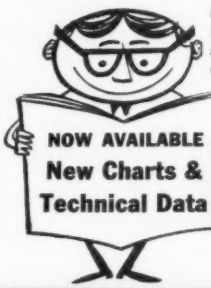
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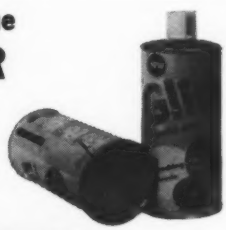
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Since the arrival of modern methods to challenge the milling of soap the problem of cracking has attracted some attention. This is not a new problem and has exercized the minds of investigators in the past.

Cracking of soap may be caused by chemical, physical and mechanical forces. The first two stem from the composition of the soap, its fatty acid and electrolyte content. Processing conditions and especially the extrusion of the soap bar must be adapted to soap composition and plasticity.

Provided all factors are equal, especially the titer of the fatty acids, the moisture content which governs plasticity may hold the answer to the cracking problem. Too little moisture causes cracking in toilet soaps of high fatty acid content. The opposite is usually true of milled household soaps having a 63 to 72 per cent f.a. content.

Regarding mechanical causes for soap cracking, it is known that amalgamation under vacuum minimizes this fault by avoiding occlusion of air in the soap mass. The construction of the plodder itself can influence the occurrence of cracking.

Finally soap stamping can give rise to serious faults. It is important to avoid excessive distortion of the piece in stamping. The operation must be performed under suitable conditions of plasticity. Furthermore, it seems essential to expose the pieces to the stamp in such a manner, that the pressure of the upper and lower stamp is exerted in the direction of the soap fibers formed in the cone of the plodder.

In addition, a normal storage period of the finished soap greatly reduces any slight imperfections which have existed originally.

Translated and condensed from a paper entitled "Les Procedes de Refroidissement du Savon," by L. Gontard, published in full in a special issue of the *Revue Francaise des Corps Gras*, 60, Rue de Richelieu, Paris (2), France.

Formulas for 3 Liquid Cream Shampoos

THREE experimental formulas for cream shampoo bases are given in the Dec. 1958 issue of *Schimmel Briefs*, published by Schimmel & Co., 601 West 26th Street, New York 1. The first, supplied by Kessler Chemical Co., Philadelphia, calls for the following ingredients:

	parts
Sodium lauryl sulfate paste (WA)	45
Polyethylene glycol distearate 400*	3
Ethylene glycol monostearate 70*	1
Propylene glycol	2
Water	49

*Kessler Chemical Co.

Procedure: Heat all of the ingredients to 65-70°C. Stir slowly until mixture cools to 35°C. Keep in a warm place for a day or two to develop pearliness.

Formula II (Onyx Oil & Chemical Co.)

	parts
"Duponol WAQ"*	40
"Onyx-ol 336"** (lauric acid diethanolamine condensate)	3
Polyethylene glycol 400 distearate***	2
Magnesium stearate	1
"Emcol MAS"***	1
Sodium chloride	0.5
Water	52.5

*E. I. du Pont de Nemours & Co., Wilmington, Del.;
**Onyx Oil & Chemical Co., Jersey City, N. J.
***Kessler Chemical Co., Philadelphia.
****Emulsol Chemical Corp., Chicago.

Procedure: Heat the "Duponol WAQ" to 40°C and stir the magnesium stearate into a small portion of it. Extend this slurry with the remainder of the "Duponol" stirring slowly to avoid foaming. Dissolve sodium chloride in the water and add to the detergent. Add remaining ingredients and heat the mixture gradually to 90°C. Stir gently until the "Emcol" melts and the liquid appears homogeneous. Continue agitation while the product cools. Add perfume at a temperature of approximately 45°C.

Formula III (Adapted from Onyx data file)

	parts
"Maprofix TLS-500"* (triethanolamine lauryl sulfate)	40
"Super Amide B-5"*	5
Ethylene glycol monosterate 70**	2
Cetyl alcohol	1
Potassium chloride	0.5
Water	51
Water-soluble cosmetic color	q.s.

*Onyx Oil & Chemical
**Kessler

Procedure: Combine all ingredients, except color, and heat to 80°C. with slow agitation for five to 10 minutes. Stir while cooling. Add color, predissolved in water, and perfume while shampoo is still warm.

A preservative such as methyl para-hydroxy-benzoate should be used in all three shampoo types.

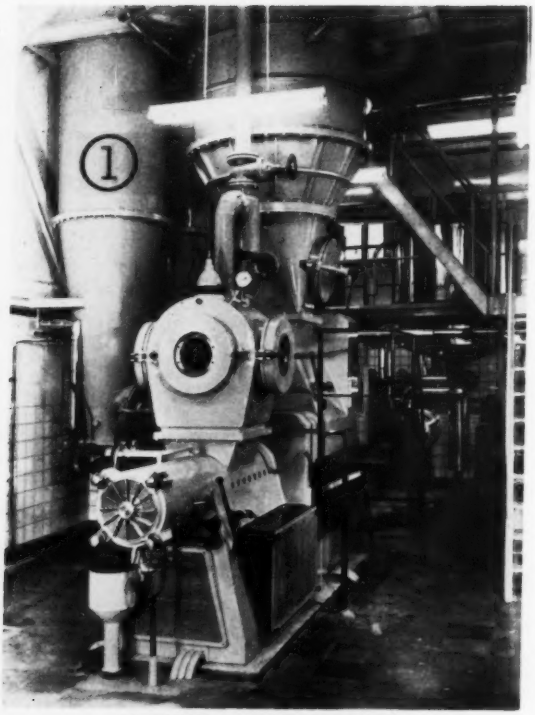
Formula I yields a pure white, very pearly shampoo of thick consistency, which, however, pours freely. Containing one per cent ethylene glycol monostearate as opacifier the shampoo is not completely opaque at warm room temperatures but the pearliness shows up well for this reason. Opacity is increased by chilling. Some of the white sodium lauryl sulfate comes out of solution and the opacifier becomes even less soluble, according to the report. While the emulsion is said to be quite stable, a small batch of the shampoo prepared in the Schimmel laboratories showed a slight, clear layer at the top of the liquid after 19 days at room temperature.

Formula II was found to give a highly opaque white shampoo with some pearling effect. The viscosity may be adjusted by varying proportions of "Onyx-ol 336" and of polyethylene glycol distearate. These two ingredients control not only viscosity of the product but also degreasing action of the detergent on the hair.

The original version of Formula III, a cream shampoo based on triethanolamine lauryl sulfate, called for three per cent cetyl alcohol. This shampoo

(*Turn to Page* 226)

G. MAZZONI, S. P. A.



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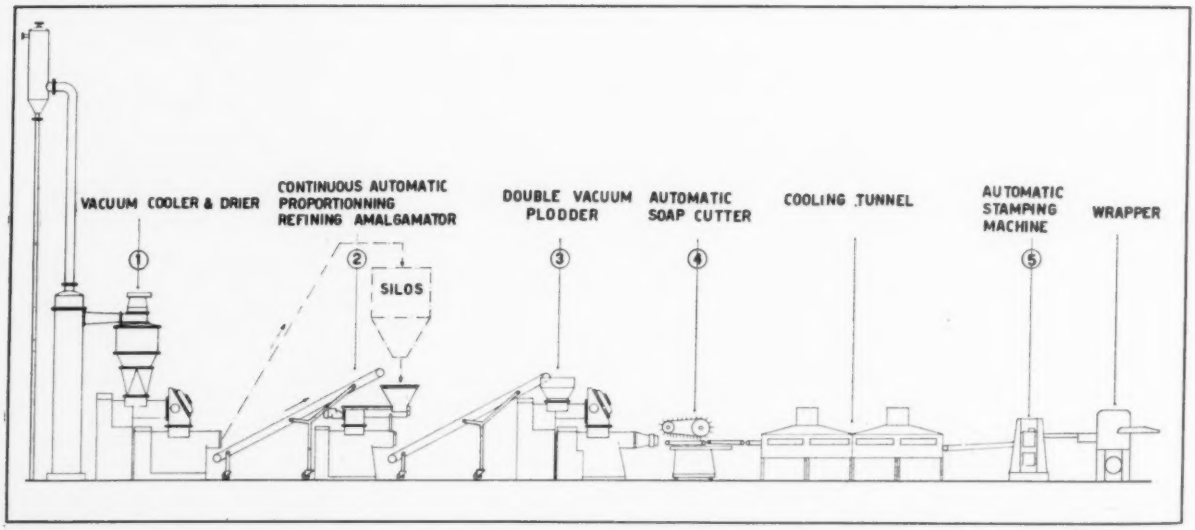
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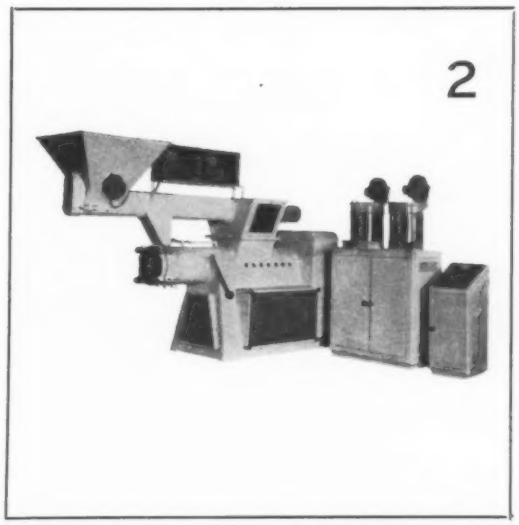
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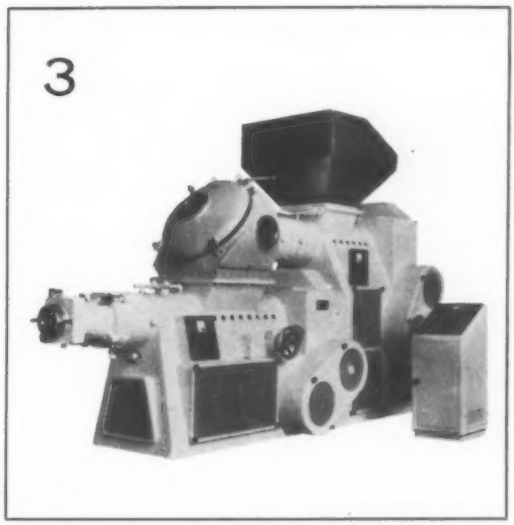
Layout of our continuous toilet soap line. Fully continuous or batch processing possible using chips silos. Our line automatically produces fully refined, first class toilet soap with no roll mills. The individual machines that are employed in the above sketch appear on this and the facing page. A complete line or individual units are available with production capacities of 250 to 1500 Kgs. per hour.

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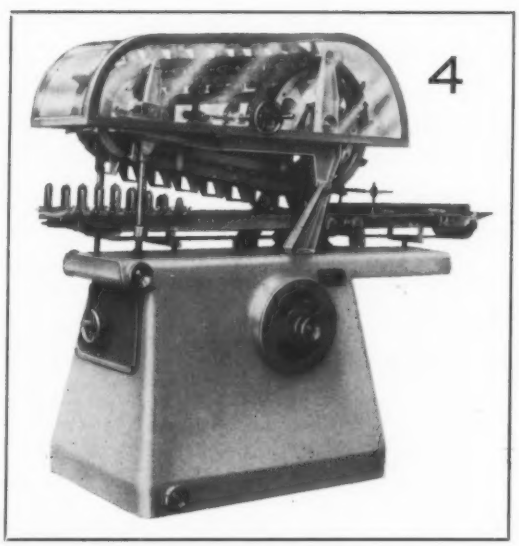
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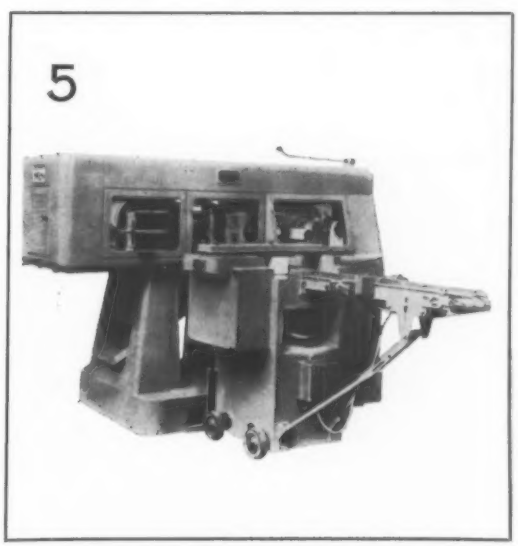


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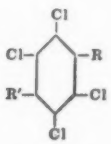
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NEW Patents

The data listed below is only a brief review of recent patents pertinent to the readers and subscribers of this publication. Complete copies may be obtained by writing to the publisher of this magazine: — MacNair-Dorland Co., 254 W. 31st Street, New York 1, N. Y., and remitting 50c for each copy desired. For orders received from outside of the United States the cost will be $1.00 per copy.

No. 2,862,849. Methods of Repelling Rodents Employing Chlorinated Phenol Derivatives, patented by Blaine O. Pray, Wadsworth, and William E. Bissinger, Akron, O., assignors to Columbia-Southern Chemical Corp. This patent teaches the method of protecting property normally infested by rodents from rodents by imparting rodent repellency thereto which comprises applying to said property a compound having the following formula:

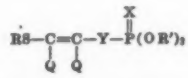


wherein radical R is selected from the group consisting of hydrogen, hydroxy and alkoxy radicals containing from 2 to 4 carbon atoms, R' is selected from the group consisting of hydrogen and NO_2— not more than one of R and R' being hydrogen.

No. 2,876,201. Detergent Composition, patented by Paul Feldmann, Danville, Va., assignor to Dan River Mills, Inc., Danville, Va. Described is a detergent composition consisting essentially of a water solution of at least 0.05% of a synthetic organic nonionic detergent, at least 0.03% of a water-soluble sodium salt of a styrene-maleic annhydride copolymer for building the detergency value of said detergent and a base selected from the group consisting of ammonia, monoethanolamine, diethanolamine and triethanolamine in an amount sufficient to give the composition a pH above 9.

No. 2,878,190. Detergents Containing Succinic Compounds, patented by Vladimir Dvorkovitz, Kansas City, Mo., and Neil W. Berst and George G. Leist, Evanston, Ill., assignors to the Diversey Corp., Chicago. A non-acid detergent composition is disclosed having a reduced tendency to irritate the skin and consisting essentially of (1) a mixture of (A) a synthetic organic detergent selected from the group consisting of sodium higher alkylbenzene sulfonates and higher alkylphenyl ethers of polyethylene glycol plus (B) an alkaline inorganic detergent which serves as a detergent builder, and (2) at least 0.1% by weight, based on total solids, of a water-soluble, skin-irritation reducing additive selected from the group consisting of succinic acid, water-soluble alkali metal salts thereof, and succinimide, said inorganic detergent builder being present in said composition in an amount (a) in excess of said additive and (b) in excess of said synthetic organic detergent.

No. 2,864,741. Di (alkylmercapto) Substituted Vinyl, Dialkyl Phosphate and Thiophosphate Insecticides, patented by William R. Diveley, Newark, Del., assignor to Hercules Powder Co., Wilmington, Del. A compound is claimed of the formula



in which R and R' represent lower alkyl radicals, X and Y are selected from the group consisting of oxygen and sulfur, and one Q is SR and the other is H.

Also covered are an insecticide composition comprising a compound of claim 1 and an insecticide adjuvant as a carrier therefor, as well as the method of preparing a compound of the formula



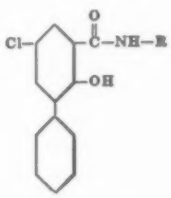
which comprises contacting a compound of the formula



with two molecular proportions of a compound of the formula MeSR at a temperature in the range of 0 to about 100° C. until substantially all of the chlorine is replaced by SR, in said formulas R and R' representing lower alkyl radicals, X and Y representing an element of the group consisting of sulfur and oxygen and Me.

No. 2,877,186. Liquid Detergent Composition, patented by William C. Krumrei, Springdale, O., assignor to Procter & Gamble Co., Cincinnati. This patent claims a single phase heavy duty detergent composition consisting essentially of, in parts by weight, from 6 to 14 parts of salts of alkyl glyceryl ether sulfonate of which the cation is an alkali metal, at least 50% of the alkyl groups of the said alkyl glyceryl ether sulfonate being derived from alcohols having from 10 to 14 carbon atoms, from a minimum of 12 parts to a maximum of the limit of solubility at room temperature of a phosphate selected from the group consisting of potassium pyrophosphate, potassium tripolyphosphate and mixtures thereof 3.5 to 6 parts of sodium silicate solids having a SiO_2/Na_2O ratio of 1.6:1 to 2.6:1, 3 to 8 parts of an anionic solubilizer selected from the group consisting of trialkyl phosphates, wherein each of the alkyl groups contains not more than 5 carbon atoms, the alkali metal salts of benzene sulfonate, the alkali metal salts of toluene sulfonate, 2 to 6 parts of an assistant solubilizer selected from the group consisting of ethyl alcohol, isopropyl alcohol and diethylene glycol monobutyl ether, and not less than 40 parts and not more than 75 parts of water.

No. 2,865,861. Halogenated 3-Phenylsalicylanilides, patented by John A. Stephens, St. Louis, Mo., assignor to Monsanto Chemical Co., St. Louis. An antiseptic detergent soap composition is patented comprising a detergent soap and 0.1% to 10% by weight based upon the soap of a compound of the structure



where R is a benzenoid hydrocarbon radical containing 1 to 3 chlorine substituents which are directly attached to the aromatic ring nucleus of the said benzenoid hydrocarbon radical.

No. 2,879,231. Shampoo Composition, patented by John Marshall Allen, Madison, and George Vane Scott, Jersey City, N. J., assignors to Colgate-Palmolive Co., Jersey City, N. J. A liquid shampoo in a pressure container is patented which comprises the ammonium salts of sulfated monoglycerides of higher fatty acids as a detergent, a liquefied normally gaseous propellant, a minor proportion of a saturated higher fatty alcohol of about 12 to about 16 carbon atoms effective to improve the foaming characteristics, and an aqueous lower monohydric alcohol solvent.

No. 2,863,798. Iodine Chloride Preparation for Controlling Microorganisms, patented by Morris V. Shelanski, Atlantic City, N. J., and Murray W. Winicov, Philadelphia, assignors to West Laboratories, Inc., Long Island City, N.Y. The invention introduces a preparation for the control of microorganisms consisting essentially of iodine chloride and in major proportion a surface-active compound from the group consisting of aliphatic fatty acid alkylene oxide condensates in which the aliphatic fatty acids contain from 6 to 26 carbon atoms and from 4 to 60 mols of alkylene oxide are condensed per mol of fatty acid, and alkyl aryl sulfonates in which the alkyl group contains from 4 to 30 carbon atoms, and the aryl radicals is from the group consisting of phenyl and naphthyl, said preparation containing from 0.1% to 30% iodine and from 0.1% to 10% chlorine.



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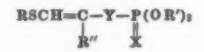
No. 2,868,812. Manufacture of Fatty Acid Monoesters of Glycerol Monosulfuric Acid and Salts Thereof, patented by Frederick William Gray, Belleville, N. J., assignor to Colgate-Palmolive Co., Jersey City, N. J. This patent teaches a process for making a detergent composition intermediate, which, on neutralization in an aqueous medium with a solution of caustic soda, will yield a water soluble detergent salt composition analyzing at least 45 percent active detergent ingredient on a dry composition solids basis, and less than eleven parts ether soluble material per 100 parts active detergent ingredient, which process comprises reacting one molecular proportion of coconut oil with a mixture of two molecular proportions of glycerol trisulfuric acid and from 4.0 to 4.8 molecular proportions of sulfuric acid monohydrate, at a temperature between 36°C. and 65°C.

No. 2,862,850. Dithiocarbamate Rodent Repellent Compositions and Methods, patented by Lyle D. Goodhue, Bartlesville, Okla., assignor to Phillips Petroleum Co. A method is described for protecting growing plants and other materials normally consumed as food by rodents which comprises applying to said plants and other materials, in an amount sufficient to effectively repel said rodents, a compound selected from the group consisting of N,N-dimethyl-S-tert-butylsulfenyl diothiocarbamate and N,N-dimethyl-S-methylsulfenyl dithiocarbamate, incorporated with an inert repellent adjuvant as a carrier therefor.

No. 2,865,806. Solidified Air Odor Control Liquids, patented by Jack J. Bulloff, Dayton, assignor to interstate Sanitation Co., Cincinnati. A solid air odor controlling composition is claimed consisting essentially of the product obtained by dissolving a solid moldable material selected from the group consisting of polyethylene and ethyl cellulose, and having a Dow melt index number between 0.1 and 35 in liquid menthadiene, the constituents being admixed at a temperature of 160° F. to 250° F., and cooling the solution to form a solid product.

No. 2,868,688. Stabilized Pesticidal Compositions, patented by Hans A. Benesi, Berkeley, Calif., Yun Pei Sun and Erwin S. Loeffler, Denver, and Kenneth D. Detling, Orinda, Calif., assignors to Shell Development Co., Emeryville, Calif. A stable solid, pulverulent biocidal composition is patented comprising as toxicant a polyhalogen-substituted organic compound comprising at least one pair of fused carbocyclic rings having from 3 to 7 ring carbon atoms in each of the rings of said pair and a plurality of atoms of halogen substituted on at least one of said carbocyclic rings, as adjuvant a substantially toxicologically inert pulverulent, solid diluent, said diluent normally having an intrinsic acidity represented by a pK_a less than 0, and an acid-neutralizing agent transfused throughout the composition in an amount at least sufficient to neutralize the intrinsic acidity of said diluent to a value not less than 0 and up to 25% by weight of the said diluent.

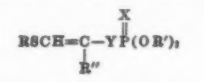
No. 2,864,740. Beta-Alkylmercaptovinyl Dialkyl Phosphate and Thiophosphate Insecticides, patented by William R. Diveley, Newark, Del., assignor to Hercules Powder Co., Wilmington Del. Described is a compound of the formula



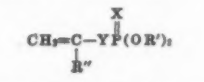
in which R and R' are lower alkyl radicals, R" is selected from the group consisting of lower alkyl radicals and hydrogen and X and Y are members of the group consisting of sulfur and oxygen.

An insectide composition comprising a compound of claim 1 and an insectide adjuvant as a carrier therefor are also claimed.

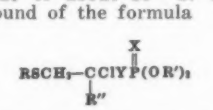
The method is taught of preparing a compound of the formula:



which comprises contacting a compound of the formula RSC1 with a compound of the formula



at a temperature in the range of about −20 to about 50° C. whereby a compound of the formula



is produced and subsequently heating said last named compound at a temperature in the range of about 20° C. to about 150° C. in the presence of an acid acceptor, in the formulas R and R' representing lower alkyl radicals, R" representing a member of the group consisting of lower alkyl radicals and hydrogen, and X and Y representing members of the group consisting of sulfur and oxygen.

No. 2,874,087. Disinfectant Compositions, patented by Albert Jakob Obladen and Martin Karl Deutsch, Hamburg, Germany. Described is a disinfectant composition comprising 5% to 6% of para-chloro-meta-cresol, 5% to 6% ortho-phenylphenol, 10% alkali metal pentachlorophenolate and the balance of a surface-active agent and water.

No. 2,877,187. Detergent Containing β,β'-Decylaminobisethanolpropionamide, patented by Lloyd F. Henderson, Fair Lawn, and Charles H. Schramm, Hillsdale, N. J., assignors to Lever Brothers Co., New York. A light duty detergent composition is claimed consisting essentially of a synthetic organic nonsoap detergent selected from the group consisting of anionic and nonionic synthetic organic nonsoap detergents and an amount within the range from about 2 to about 10% by weight of the synthetic nonsoap detergent of β,β'-decylaminobisethanolpropionamide to enhance the detergency and sudsing of the synthetic nonsoap detergent.

No. 2,874,124. Anti-Soil Redeposition Agents, patented by Emil A. Vitalis, Springdale, Conn., assignor to American Cyanamid Co., New York. Covered is a detergent composition capable of preventing redeposition of soil in the cleaning of fabrics comprising from about 5 to about 95 parts by weight of a water-soluble organic detergent selected from the group consisting of fatty acid soap and synthetic organic non-soap detergents and, as a soil redeposition inhibitor, from about 0.2 to about 20 parts by weight of a polyvinyloxazolidone having a molecular weight of at least 200.

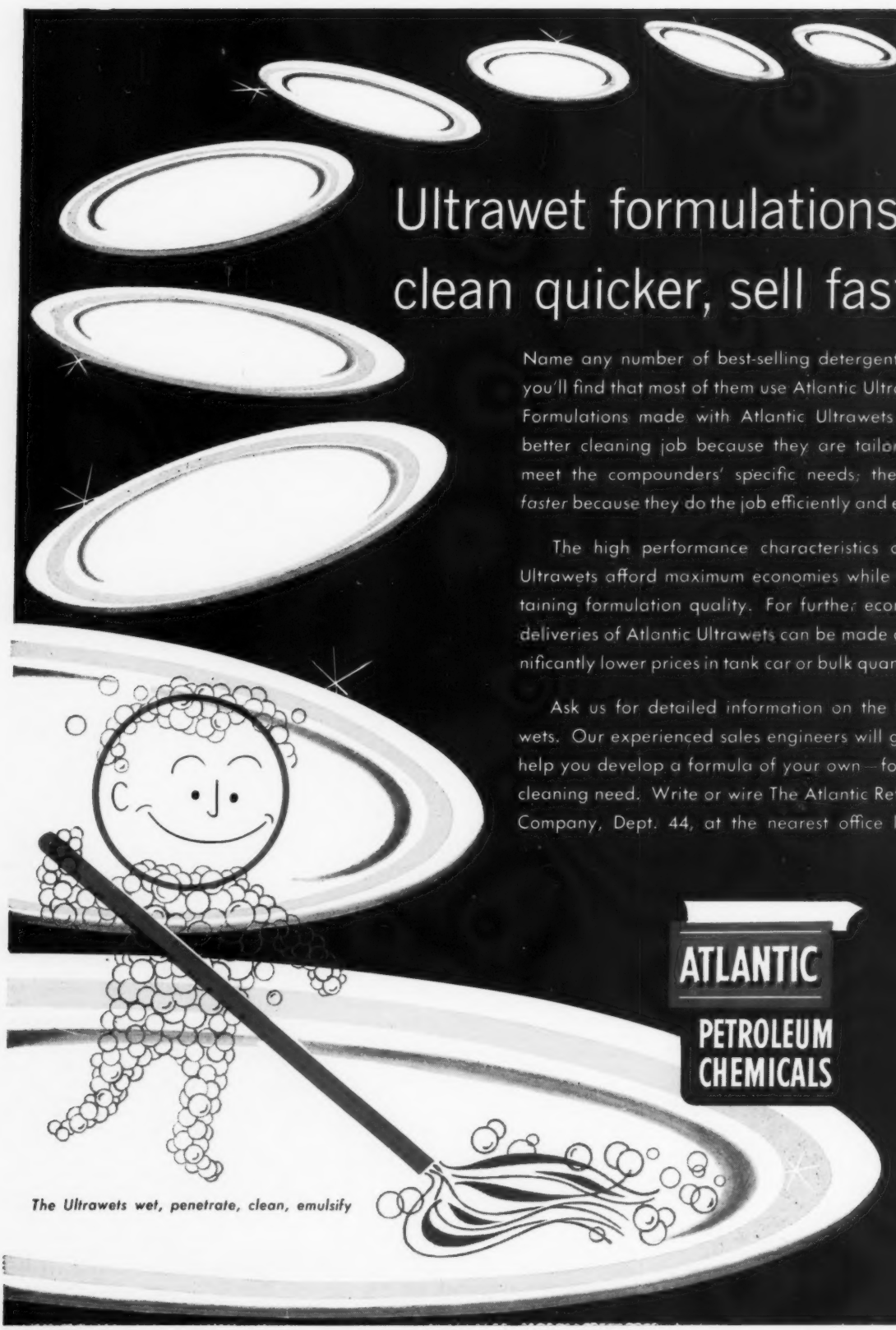
Reissue No. 24,599, original No. 296,359. Dispensing Valve Structure for Aerosol Container, patented by Albert B. Campbell, Du Page County, Ill., assignor to Campbell Products Co. This patent covers an aerosol dispenser assembly having a container, valve assembly and cap, which comprises: a dispenser container having an upper opening for receiving a dispensing valve assembly; a dispensing valve assembly comprising a valve housing having an opening; said housing having means for being attached to said container at said container opening; substantially vertically extending fluid passage means with an upper outlet positioned above said container and a lower inlet communicating with the confines of said container; a vertically extending, vertically reciprocative valve stem having an upper portion extending above said container; and sealing means for selectively opening and sealably closing said fluid passage means; said sealing means, valve stem and passage means being operatively associated with each other so that said sealing means normally closes said passage means and thereby prevents the egress of contents of said container through said passage outlet, and movement of said stem from its normal position permits the egress of contents of said container through said passage outlet, and an integral flexible removable plastic cap comprising a cylindrical noncollapsable skirt portion normally detachably secured to said container and normally circumscribing said passage means and said upper portion of the reciprocative valve stem; the lower end of said skirt having retaining means for permitting the cap to be secured to said valve housing; said skirt having a fluid outlet extending at an angle to the axis of said stem through which the container contents is adapted to spout; said cap having a substantially flat flexible top spaced above said skirt and overlying said upper portion of the valve stem which, when depressed, moves said valve stem from its normal position towards said container opening thereby permitting the egress of contents of said container through said passage outlet; a substantially vertical upstanding wall extending above said flexible top and said skirt for preventing accidental depression of said flexible top and said valve stem; said flexible top being capable of being depressed independently of said upstanding wall and said skirt but only by selective pressure applied within the boundary of the upstanding wall.

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Name any number of best-selling detergents and you'll find that most of them use Atlantic Ultrawets. Formulations made with Atlantic Ultrawets do a better cleaning job because they are tailored to meet the compounders' specific needs; they *sell faster* because they do the job efficiently and easily.

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Products and PROCESSES

Modified Soap

A mild soap substantially unaffected by water hardness results from the addition of a condensate of protein (or protein decomposition products) with a fatty acid or higher molecular sulfonic or sulfinic acids combined with the addition of higher molecular phosphates. An example calls for 92 parts by weight of soap chips to which are added: two parts of an approximately 50 per cent fatty acid-protein condensation product and five parts of an 65 per cent paste of condensed sodium phosphates which have been adjusted to pH 8.2. The components are thoroughly mixed in a kneading machine and colorants, fillers, and perfume are added. German patent 922,432.

—★—

New Insecticidal Paint

A new alkyd base interior paint called "Kil-Sect" has been introduced by Consolidated Paint and Varnish Corp., Cleveland. Containing dichloro diphenyl dichlorethane, the product is said to be effective against a wide variety of insects including ants, flies, mosquitoes, roaches, fleas, lice, and ticks.

Claimed to be odorless and harmless to humans and warm blooded animals, "Kil-Sect" is available in 15 shades.

—★—

Waterless Hand Cleaner

A hand cleaner capable of removing a wide variety of heavy soils and having good dermal properties might be based on one of the following compositions:

	Parts	Parts
Fatty alcohol sulfonate paste	27	20
Methylhexalin	20	20
Alcohol	8	12.5
Water	45	47.5

A mild abrasive such as colloidal silica, bentonite, or fine quartz powder is worked in to either of these mixtures.

If a product of less "greasy" feel is desired the following ingredients might do the job:

	Parts
Carboxymethylcellulose	8
Water	27
Glycol	4
Alcohol	42
Trichlorethylene	19

Water and glycol or glycerine must be added to adjust the base to the desired consistency and an abrasive, preferably powdered quartz, is incorporated. *Seifen-Oele-Fette-Wachse,* March 4, 1959, p. 112.

—★—

CMC in Hard Water

Soil removing and suspending power of sodium carboxymethylcellulose is affected by water hardness. Tests were carried out in water of 0 to 20° French hardness. The effect is less marked on weak soap solutions containing approximately 100 mg CMC per liter than on solutions of high soap content but incorporating no CMC. In soft water, the increase in removing power effected by addition of CMC is most pronounced in the presence of low soap concentrations. In the same medium soap concentration has hardly any influence on soil suspending power. K. J. Nieuwenhius and H. K. Tan, *Teintex,* 23, 629-48, 1958.

—★—

Spray Shoe Polishes

Three formulas for spray type aerosols for polishing shoes without buffing contain the following components:

	I weight %	II weight %	III weight %
Silicone (510 fluid) 60,000 cs	0.18	0.27	0.32
Polyvinyl stearate synthetic wax	3.27	4.91	5.93
Super "Hartolan"*	0.47	0.72	0.86
Isopropanol	10.00	15.00	16.35
VM and P naphtha	8.66	13.00	11.23
Methyl isobutyl ketone	26.42	39.60	38.95
N butyl alcohol	1.00	1.50	1.36
"Genetron" 12**	50.00	25.00	25.00

*Walter H. Jelly & Co., Chicago. **General Chemical Div., Allied Chem. Corp., New York.

This type of product should be pressure filled in a tin plate can. Spray type valve is suggested for formula I, mechanical break-up for II and III. Vapor tap is optional for all three formulas. Pressure for formula I is 40 psig, for II and III approximately 25 psig.

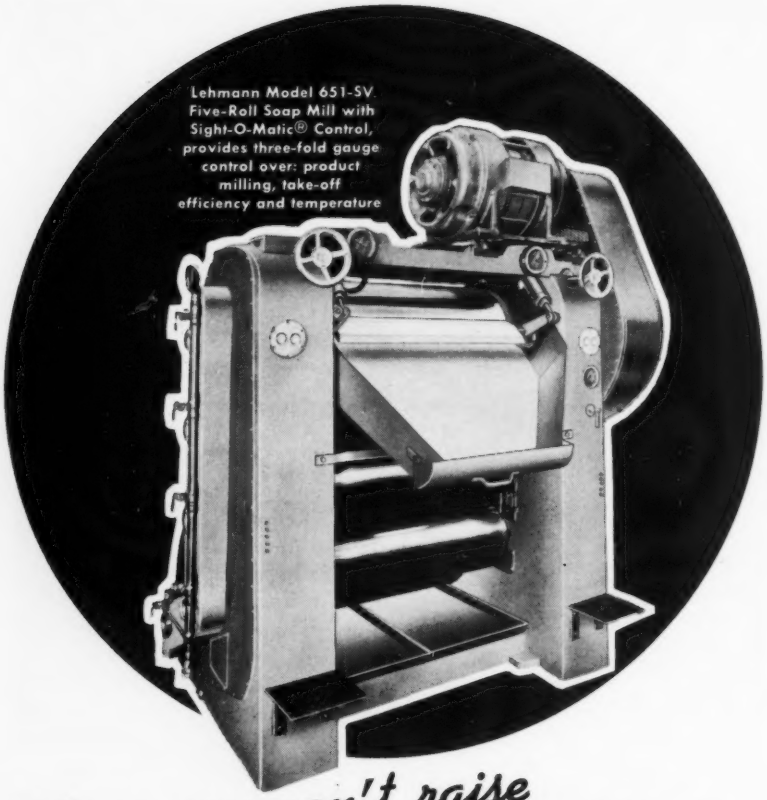
Shoes should be wiped to remove dirt and dust prior to application of spray polish. Valve orifice should be held 10 to 20 inches away from the surface being treated.

—★—

Stain Remover

A stain removing paste of wide usefulness may be based on potassium oleate with additions of CMC, a bleaching agent such as sodium dithionite and a solvent such as tetra-, or tri-, or preferably methyl hexalin. Removal of oil and grease stains is accomplished efficiently by a product incorporating colloidal silica with trichlorethylene or carbon tetrachloride, a small quantity of benzene and a trace of a higher boiling solvent. A small percentage of dithionite could be added to such a product. Great care must be taken that the bleach is dosed within the margin of safety for the color of the garment. Dithionite is suitable also for removal of fruit and wine stains. Since it is unstable in water it is usually marketed for this purpose as a powder or stick. Water is added only when the product is used.

Pastes for the removal of rust stains may be formulated from an aqueous solution of sorrel salt (poison) which is thickened by an acid stable binder. Colloidal silica might conceivably be used in such a product. *Seifen-Oele-Fette-Wachse,* No. 5, p. 112, and No. 7, p. 176, 1959.

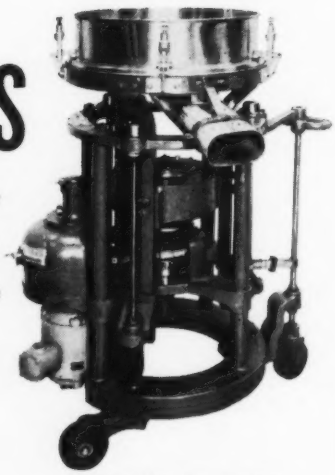


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Cream Shampoos

(*From Page* 217)

proved to be unstable. It was found to separate into layers. Since cetyl alcohol has a lower density than ethylene glycol monostearate, it was suspected of creaming the emulsion. The proportion of cetyl was cut to one per cent. This formulation appears to be more stable but needs further testing, according to Schimmel.

Color has been included in Formula III because the detergent and amide give a yellowish tinge to the shampoo. Also some discoloration may be expected on aging. The coloring agent must be tested to make sure that it does not fade in the shampoo.

About 0.4 per cent of perfume should suffice for compositions I and II. But up to 0.6 per cent of a rather powerful fragrance may be required to mask the odor of the triethanolamine salt of the detergent in Formula III. Perfumes intended for white cream shampoo formulations must be chosen with an eye to color stability on aging and exposure to light.

—★—

New Givaudan Aromatic

A new synthetic aromatic chemical tradenamed "Folrosia" was introduced recently by Givaudan-Delawanna, Inc., New York. Described as a new rose chemical with a crisp, leafy-rose odor, "Florosia" has applications in soaps, detergents, and cosmetic products. Its uses cover a wide range of perfume types and it is exceptionally strong and stable, Givaudan says. Samples and technical information may be obtained from the company, 321 West 44th St., New York 36.

—★—

New Modified Shellac

A new esterified and modified wax-free refined shellac has just been introduced by Mantrose Corp. of Brooklyn, N.Y. It has a wide range of compatibility including vinyls, alkyds, and other film forming materials. ES-45 is

said to impart to the cast film improved gloss, flexibility, leveling properties and light resistance. Specifications and samples are available from Mantrose.

—★—

Snell Sells Rights

World-wide manufacturing rights for the "Snell Spray Dryer" have been sold by Foster D. Snell, Inc., New York, to Bennett Sons & Shears Ltd., London, Foster D. Snell, president and chairman, announced recently.

The transaction was in line with Snell's policy of divesting itself of activities which involve the manufacture and sale of products. These products are the result of the company's work in designing, manufacturing, installing, and starting-up pressure nozzle co-current spray dryers. The London firm makes chemical processing equipment.

—★—

Slipmeter Checks Floors

A new device called the "Safe-Test Slipmeter" was introduced recently by Frazier Engineering Co., Houston, Tex., for measurement of the slipperiness of floors. The product is said to provide an immediate and accurate measurement of floor conditions making it possible to maintain records of floor surface care. It is also claimed to be useful in potential compensation cases and in eliminating unwarranted complaints about slippery floors. The "Slipmeter" records on any type surface, Frazier says.



NEW HORIX
UNDER SURFACE FILLER

controls foam
speeds up filling
AT
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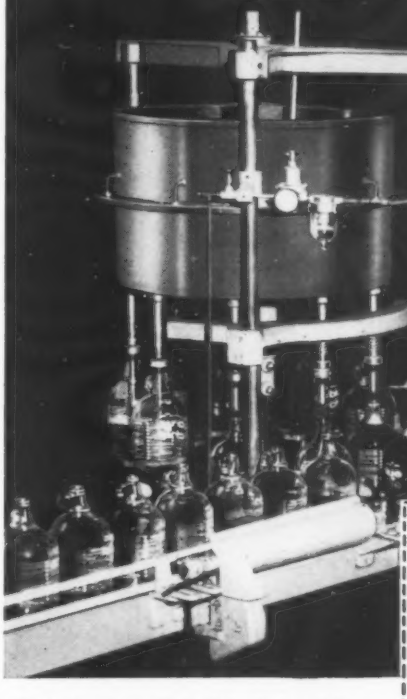
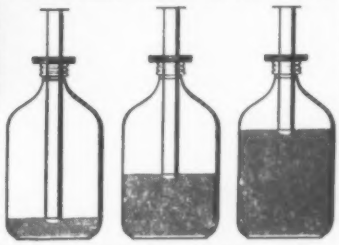


Illustration shows Horix Under-Surface Filler Model HB-BF-9 operating at S. C. Johnson & Son plant. They are filling gallon jugs at 13 CPM—Gallon "F" style cans at 16 to 18 CPM —and ½ Gallon "F" style cans at 30 CPM.

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At the start of fill, double action filling tube drops to bottom of container, and then withdraws gradually so that the entering liquid is always below the surface of the liquid. This operation minimizes formation of foam and incorporation of air in product.

Here is one of the most important developments in liquid filling in recent years. With this new Horix filler, the formation of foam during filling is kept to the absolute minimum.

S. C. Johnson & Son reports they are handling highly foamy products with significantly improved production and with greater accuracy than with previous filling methods.

This new Horix Under-Surface Filler combines the best features of both top and bottom filling. Fill height is exact since only the tip of the filling tube extends below the surface level of the liquid being filled. Speed of operation is maximum due to the prevention of foam and trapped air bubbles.

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Book Reviews

New Volume on Fatty Acids

FATTY acids, their production, chemistry, and applications are covered in 16 monographs combined in a volume entitled *Industrial Fatty Acids and Their Applications*. Edited by E. Scott Pattison, manager of the Fatty Acid Producers' Council, a division of the Association of American Soap and Glycerine Producers, Inc., the volume presents a cooperative effort by technical production men from more than a dozen member firms.

A chapter on "Surface-Active Derivatives of Fatty Acids," by Miles R. McCorkle and Eric Jungermann of Armour and Company, deals with the four most important types of surface active agents derived from fatty acids: esters, such as mono- and diglycerides; sulfated and sulfonated derivatives; nitrogen derivatives of fatty acids; and ethylene oxide condensates. Methods of preparation, reactions, physical and chemical properties and industrial outlets are discussed.

A monograph on "Applications of Soaps and Other Fatty Surfactants" is divided into two separate articles. Willis J. Beach of Sugar Beet Products Co. deals with fatty acids in special purpose soaps. He covers formulations and processing of liquid soaps, solid soaps, powdered hand soaps, waterless hand cleaners, and paste and cream soaps.

Donald Price, consultant, contributed a summary of applications of fatty surfactants. Included are mono- and diglycerides and glycol esters; fatty alcohol sulfates; sulfated monoglycerides; "blocked carboxyl" compounds; alkylolamides; fatty amines and amides; quaternary ammonium compounds; amphoteric surface active agents; and polyoxyethylene derivatives of fatty acids, alcohols, amines and amides.

Mr. Pattison wrote the introductory chapter entitled "Fatty Acids Today and Tomorrow" and there is a foreword by A. R. Bethke, Darling & Co., 1958 chairman of the Fatty Acid Producers' Council.

Industrial Fatty Acids and Their Applications, edited by E. Scott Pattison, published April 6, 1959, by Reinhold Publishing Corp., New York. 230 pages, cloth bound, nine by six inches, price $7.00.

—★—

What Makes People Buy?

A new text on motivation research by Louis Cheskin has been published this month. Dedicated by the author to "the man who has to make marketing decisions," the volume deals with motivation research and its commercial application. According to the author the present book covers what he did



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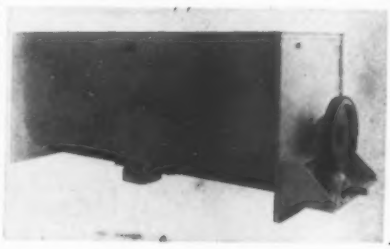
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The Marion Mixer is engineered for precision mixing and turns out TOP QUALITY mixed products for chemical manufacturers everywhere. The Marion Mixer is recommended for mixing the Lightest or Heaviest Materials. Its simple, efficient design is rugged enough to handle any volume of mixing large or small . . . and at the same time, it constantly safe-guards your formula mixes from loss of uniformity. Laboratory tests have proven that even trace materials can be blended into the most complicated industrial chemical formulas, and pass individual analysis tests for the most even batch distribution possible.

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not cover in its predecessor "How to Predict What People Buy" published in 1957 and intended as a primer in motivational research. Cheskin's latest volume discusses the tools of controlled motivation research, illustrates their working in actual case histories and describes in detail the principles on which his testing methods rest and succeed.

The tests developed by Mr. Cheskin, he claims, reveal what motivates people to buy or what makes them buy. "Research that records what people say does not reveal their true wants" says the author. "Only the type of research that discloses natural, unihibited reactions, real feelings, true attitudes and preferences in which self-interest is involved can be considered valid. This type of research did not develop in the climate of the business world but in the area of behavioral sciences.

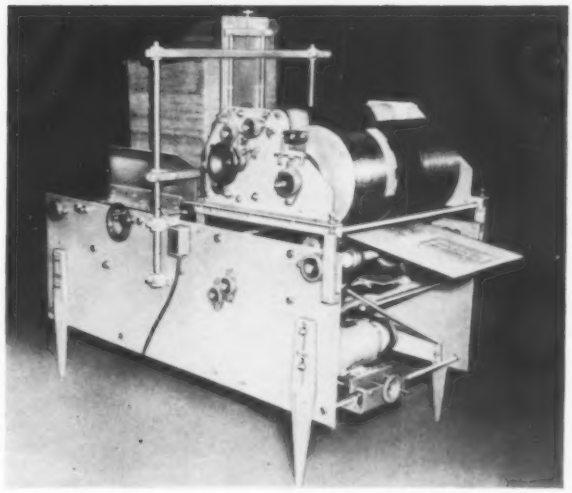
"The basic principles and research techniques were borrowed from the field of psychology, particularly from psychoanalysis and from Gestalt psychology. The techniques have been modified and adapted to marketing needs. These techniques are now highly developed. They have been used successfully for solving marketing problems for about fifteen years. They provide a basis for management decision." The book illustrates their application to such problems as a new label or new package, a new trademark or other marketing tool.

"Why People Buy," by Louis Cheskin, published by Liveright Publishing Corp., New York, 319 pages, cloth bound, price $5.00.

—★—

Carbide Esters Data

A 48 page publication describing 26 esters, their properties and applications was published recently by Union Carbide Chemicals Co., 30 East 42nd Street, New York 17. Evaporation rates, viscosities of resin solutions, dilution ratios, and other pertinent information are presented in the form of graphs and tables. A detailed bibliography and reference section are appended.



A new power driven case printing unit by Kiwi Coders Corp., Chicago, handles flat cartons ranging from six by 10 inches to 32 by 44 inches at speeds from 25 to 50 units per minute. Model #4296 has automatic counter and centering device, rapid type change and setup. Smaller size available.

—★—

Control of Mice

"Mice in Buildings" is the title of a new booklet published by and available from Wisconsin Alumni Research Foundation, P.O. Box 2217, Madison, Wis. The 26-page brochure suggests control of mice in buildings by correct use of traps combined with warfarin baits. Both cereal and water-soluble baits should be employed. Information on placement of baits and traps and advice on reducing mouse invasion of buildings are included.

—★—

D&O Odor Masks Data

Dodge & Olcott, Inc., 180 Varick St., New York, has just published a four page leaflet describing properties and uses of its second series of "A-Z" industrial odor masks. Economy in use concentration and price is claimed for these products which are suggested for incorporation in aerosol and other space deodorants, polishes, waxes, sweeping compounds, and a wide range of other chemical specialties.

Soluble in alcohol, kerosene and other petroleum distillates and clearly soluble at the rate of one per cent in 50:50 alcohol and water, the odor masks may be solubilized for aqueous applications. One part of odor mask to two to three parts of a non-ionic solubilizer is suggested.

"A-Z" odor masks are available in a variety of fragrances tailored to reodorize specific products. Prices range from $2.20 to $2.50 a pound. D&O will supply trial quantities and specifications upon request.

—★—

New Ertel Bulletin

A new bulletin has just been published by Ertel Engineering Corp., Kingston, N.Y., describing their line of liquid handling equipment. Well illustrated, the bulletin shows many types of Ertel filter sheets and filtering equipment. Also included are application tables, flow rate and filtration area charts, applicable to the various filter models.

Bottle fillers, filters, pumps, and mixers, for the chemical, cosmetic, and drug industries are described and illustrated. Bulletin 58 may be obtained from the company.

—★—

Shellac Booklet

A free booklet on wood finishing has just become available from the Shellac Information Bureau, 51 Pine Street, New York 5. The publication is intended for the do-it-yourself minded householder who desires to refinish damaged wood surfaces, to preserve stored wood for future use, or to embark on some new wood work project. Advice is offered on the most advantageous way to use shellac for these purposes.



Put 30% more bulk into your detergents with spray-dried phosphates

When we spray-dry sodium phosphates we come up with hollow, air-filled granules that are 70% bulkier than conventional phosphates. Sodium tripolyphosphate and tetrasodium pyrophosphate are available in spray-dried forms.

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Shea sodium tripolyphosphate is 97% to 99% pure—highest in the industry. For more information on these spray-dried products or other Shea phosphates, write to the address below. Disodium phosphate, trisodium phosphate, sodium hexametaphosphate, and sodium tripolyphosphate are available in conventional density, granular form.

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News...

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Brillo Mfg. May Split Stock

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Mennen Co. Appoints Three

• • •

Purex Shifts Ad Agencies



Douglas W. Thomas, newly elected vice-president in charge of production and manufacturing for Boyle-Midway Division of American Home Products Corp., New York, has been assistant to the president since 1955. Prior to that appointment, he had served as production manager for 15 years at Boyle-Midway plants in Cranford, N. J., and earlier in Jersey City, New Jersey. See details on page 235.



"If this is the only way we can keep our product uniform, we'd better switch to a fatty acid!"

More and more manufacturers are finding that fatty acids have important advantages over natural fats and oils for making a host of products: soaps and surfactants . . . textile finishes . . . cosmetics and toiletries . . . paints and plastics . . . lubricants . . . and numerous intermediates.

Although natural fats and oils may appear inexpensive on a raw material cost basis, the use of fatty acids can save a great deal of money . . . in equipment, in processing and in man-hours. Type for type, as compared to natural fats and oils, fatty acids are more reactive and permit faster and more complete saponification, esterification or other reactions.

Fatty acids are products of known composition and predictable behavior. They give maximum flexibility in the choice and ratio of fatty constituents. They have improved stability, because factors responsible for rancidity and decomposition have been removed.

Hidden Processing Costs Rule Out Fats and Oils. In the industrial soap field and in toiletries, the decision to saponify a fat or the corresponding acid may be an economic one, but many hidden costs of starting with the fat are frequently overlooked. The fatty acid yields savings in steam and labor, gives greater output per unit of equipment cost. It gives assurance of a uniformly good product, with the proper viscosity, odor and color characteristics. Greater flexibility in choosing fatty composition is possible, and products can be adapted to changing demands.

Controlled Composition Insures Product Acceptance. In many industries, fatty acids offer definite quality control advantages over fats and oils. For example, triple-pressed stearic acids like Groco 55L are produced with closely balanced physical and chemical properties which make these fatty acids invaluable in precise reactions. A case in point is esterification procedures. Such precision would be impossible with a natural fat.

Fast Reactions Make Equipment More Productive. In lube grease manufacture, fatty acids or their metallic soaps permit closer control and faster reaction during saponification than do fats and oils. Plant equipment can be used more productively. Better end products are possible. The use of oleic acids such as Groco 4, for example, with closely controlled titre, has done much to assure greases of uniform lubricating and bodying characteristics, greases which will not separate during long storage under extreme temperatures.

For more information on specification fatty acids for your consideration, send for the brochure "Fatty Acids in Modern Industry."

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News

Advanced by Hollingshead

Jack Stranix has been appointed to the newly created position of customer relations supervisor for R. M. Hollingshead Corp., Camden, N. J., Richard S. Moseley, manager of the industrial maintenance chemical division, announced recently. Previously with T. Frank McCall's Sons, Chester, Pa., janitorial supply house, Mr. Stranix also has been associated with S. C. Johnson & Son, Inc., Racine, Wis., at its Long Island office.



Jack Stranix

In his new post he is responsible for customer relations at Hollingshead's Camden headquarters.

—★—

Economics Lab Sales Up

Net sales of Economics Laboratory, Inc., St. Paul, Minn., for the nine months ended Mar. 31, 1959 amounted to $15,469,623, compared with $14,118,711 for the corresponding period last year. Net income was $401,370, or 89 cents per common share, against $350,426, or 77 cents per share, in 1958.

—★—

Boyle-Midway Names V.P.

Douglas W. Thomas has been elected vice-president — production and manufacturing for the Boyle-Midway Division, American Home Products Corp., New York.

Assistant to the president since 1955, Mr. Thomas previously was production manager for 15 years for Boyle-Midway plants in Cranford, N. J., and earlier, in Jersey City. Before joining the then A. S. Boyle Co. in Baltimore, Md., in 1940, he was a laboratory technician for Shell Oil Co. in Houston, Tex.

—★—

Hospital Germicide Folder

A folder entitled, "What's All This Talk About Hospital Germicides?" dealing with its line of germicides for hospitals, was announced last month by James Varley & Sons, Inc., St. Louis. Four different types of disinfectants and germicides made by Varley are illustrated and described in the folder. Organisms against which Varley germicides give "100% kill" are listed in the folder, which is available on request.

—★—

CSMA Div. Name Change

A proposal to change the name of the Soap, Detergents and Sanitary Chemicals division of the Chemical Specialties Manufacturers Association, New York, to the Detergent and Cleaning Compounds division will be voted upon by the association membership at a general session, Wednesday, May 20, at 10 a.m., at the CSMA 45th annual mid-year meeting, Drake Hotel, Chicago. CSMA's board of governors approved the name change by a two-thirds vote at its meeting in Florida in March. A two-thirds affirmative vote at the meeting in Chicago is required for approval.

Included in the resolution is the proposal that the scope of the newly named division be confined to those products used expressly for cleaning and washing, while products primarily designed for the biological control of microorganisms be transferred to the Disinfectant and Sanitizers Division.

Duncan Wins Award

J. K. Duncan, household products sales promotion manager for S. C. Johnson & Son, Inc., Racine, Wis., was recently named "Sales Promotion Executive of the Year" for 1958. The selection was made by The Sales Promotion Executives Association, and the award presented by *Advertising Requirements* magazine in recognition of his "contribution to the better understanding and appreciation of effective sales promotion." Cited as outstanding were the sales promotion campaigns for "Pledge," "Klear," "Raid" insecticides, and "Instant J-Wax."



J. K. Duncan

Mr. Duncan joined Johnson's household products division in 1945 and was previously a free-lance sales promotion specialist.

—★—

Cowles Elects Winding

Charles C. Winding, director of the school of chemical and metallurgical engineering and professor of industrial chemistry at Cornell University, Ithaca, N. Y., was elected a director of Cowles Chemical Co., Cleveland, O., at the annual meeting of stockholders last month. All five former directors were re-elected and Dr. Winding becomes the sixth member of the board.

White King Names Jones

The appointment of Edward Jones as field sales manager for White King Soap Co., Los Angeles,



Edward Jones

was announced recently by Mart C. Spiegel, general sales manager.

In his new position, Mr. Jones works with division and district sales managers throughout 11 western states. He maintains his headquarters in Los Angeles.

Previously Mr. Jones was district sales manager for The Squirt Co.

—★—

Babbitt Shows '58 Profit

B. T. Babbitt, Inc., New York, has reported a profit of $560,031 for 1958 compared with a loss of $1,117,977 in 1957, Marshall S. Lachner, president, announced last month. The company also showed a loss in 1956. Sales decreased to $20,282,161 last year against $21,874,031 in 1957 and earnings per common share in 1958 amounted to 41 cents.

Mr. Lachner credited increased gross profit margins and economies in operation for the company's brighter financial picture. He noted that the sales decrease last year was due to the discontinuance of operations at the Bridgeport, Conn., plant which did contract packaging of aerosol products. Since January 1958, the company has added to its line "Cameo" cream copper cleaner, "Cameo" stainless steel cleaner, "Bab-O" scouring pads, and "Tiffany & Co.," silver polish. This year it acquired Charles Antell hair preparations, "Vita-Yums" from AnDrue Laboratories, and "Savoy" car shampoo.

Sales for the first quarter of 1959 were considerably higher than the comparable 1958 period, Mr. Lachner reported.

—★—

Emery Appoints Warren

Eugene F. Warren has been named assistant to Arthur Schubert, executive vice-president of Emery Industries, Inc., Cincinnati, John J. Emery, president, announced last month. In his new post Mr. Warren handles special assignments in connection with the company's expansion program, including foreign market operations. Mr. Warren, a C.P.A., was previously with Lybrand, Ross Brothers and Montgomery, Cincinnati accounting firm, as manager of the tax department.

—★—

Max Factor Marks 50 Years

Max Factor & Co., Hollywood, Calif., marked its 50th anniversary with a cocktail party last month at the company's make-up salon in Hollywood. More than 125 press representatives covered the event which was attended by entertainment celebrities. A feature of the evening was the presentation of six models in period costumes displaying the make-up fashions created by the company during the past half-century.

Bristol-Myers Buys Clairol

Bristol-Myers Co., New York, manufacturer of proprietary and ethical drugs, and Clairol, Inc., maker of hair coloring products, New York, signed an agreement last month whereby Bristol-Myers will purchase Clairol in a cash transaction. Announcement of the agreement was made by Frederic N. Schwartz, president of Bristol-Myers, and Lawrence M. Gelb, president of Clairol.

Clairol was founded in 1932 and its principal products are "Clairol," "Miss Clairol," and "Lady Clairol." The company, with a plant in Stamford, Conn., has more than 400 employees and will be operated as a subsidiary of Bristol-Myers.

—★—

Winik Joins Bixon

Victor Winik has been appointed technical sales director of Bixon Chemical Corp., New York manufacturer of floor waxes, finishes, cleaners and polishes, it was announced last month by Michael Bixon, president. Mr. Winik will cover the entire eastern seaboard for Bixon. Previously he was with Foster D. Snell, Inc., New York consulting chemists and chemical engineers. Mr. Winik is completing work toward a B.S. degree in chemistry at Brooklyn College.

New officers of CIBS Association after a recent meeting in New York are, left to right, Jay Stephens, Daggett & Ramsdell, Inc., treasurer; Ray Rogers, Colgate-Palmolive Co., recording secretary; John Duncan, Hazel-Atlas Glass Co., president; Lamson Scovill, Scovill Manufacturing Co., first vice-president; and Allen T. Stewart, Parfait Promotional Packaging Co., corresponding secretary. Absent from picture is Robert C. Ring, Hewitt Soap Co., second vice-president.



Cope Dispenser Offer

An introductory offer for "Cope" waterless hand cleaner and a wall dispensing unit has been announced by The Utility Company, New York. This special limited time offer features a case containing five 5-pound cans of "Cope" cleaner in a newly lithographed can and, in place of a sixth can, a wall type self-priming dispenser unit. According to the manufacturer, the dispenser discharges sufficient cleaner for an average wash-up with a push of the plunger. When a can of "Cope" is exhausted, it is replaced in the dispenser by a full can of the product.

"Cope" can be used with or without water and is effective in removing many kinds of stains, including paint, glue, tar, cement, caulking compound, asphalt, ordinary grime and many chemical stains. In addition to the five pound cans, the product is packaged in 5 oz. tubes, 15 oz. tubes, 8 lb. cans and 50 lb. cans. Reorder cases of the five pound units for use in the dispenser will contain six cans of "Cope" rather than a dispenser.

The Utility Company, which also manufacturers "Gre-Solvent" hand cleaner and other powdered hand cleaners, is located at 636 West 44th Street in New York. The dispenser is supplied by Dema Engineering Co., St. Louis and was designed for use with the five pound can of "Cope" cleaner.

—★—

AAC May Split Stock

A recommendation to stockholders that common stock of American Agricultural Chemical Co., New York, be split three for one was made recently by the board of directors. The board also suggested that the authorized common stock be increased from 700,000 to 2,500,000 shares. A special meeting of the stockholders was scheduled for April 29 to act upon the proposal. The proposed split, if approved, was to become effective May 5.

An initial quarterly dividend of 40 cents per common share outstanding after the split, subject to approval by stockholders, was declared by the board, according to C. M. Powell, president.

—★—

Controllers Elect Two

Joseph J. Greipp, treasurer of Fels & Co., Philadelphia, and W. Tyler, comptroller of Lever Brothers Limited, Toronto, were elected members of the Controllers Institute of America last month. The Institute, established in 1931, is a non-profit management organization of controllers and finance officers from all industries. Total membership is more than 4,900.

Wall dispenser is offered with five 5-pound cans of "Cope" cleaner.



Chesebrough Names Jeynes

Paul H. Jeynes has been appointed assistant brand manager for Chesebrough-Pond's Inc., New York, for "Seaforth," "Pertussin," and "Valcream" products.



Paul H. Jeynes

For the past eight years Mr. Jeynes served as account executive for several advertising agencies. He was on a proprietary drug account with Lennon & Newell, Inc., New York advertising agency, and also has been associated with Morey, Humm & Warwick, Inc., New York.

—★—

Arizona to Build Refinery

Arizona Chemical Co., New York, jointly owned subsidiary of American Cyanamid Co. and International Paper Co., completed plans last month for the construction of a tall oil refinery in Springhill, La. The new facility will enable the company to process annually an additional 40,000 tons of crude tall oil, a sulfate paper industry by-product which it will obtain from nearby mills of International Paper Co. Arizona will produce high grade fatty acids for use in the manufacture of soaps, disinfectants, paints, varnishes, lacquers, and other industrial products.

Ground-breaking will be held in July and completion of the refinery is scheduled for the summer of 1960. Facilities include an office building and three outdoor-type production units.

CONCLUSIVE EVIDENCE OF THE SUPERIORITY OF CAUSTIC CLEANING FORMULATIONS CONTAINING Pfizer GLUCONATES!

If you compound caustic washing or cleaning formulations, you should put Pfizer Gluconates on trial in your formulas. Judge for yourself the economy and superiorities of caustic-gluconate formulations. Overwhelming evidence also shows that Pfizer Gluconates are stable, both in storage and in use, in caustic compounds.



EXHIBIT A

ONE SPARKLING CLEAN BOTTLE—The inclusion of Pfizer Gluconates in your formula will assure bottling customers of a compound which will give spotless results. Pfizer Gluconates have proven to be the product of choice for preventing formation of film on bottles and scale on equipment.

EXHIBIT B

ONE BRIGHT STRIP OF ALUMINUM—Pfizer Gluconates in your aluminum etching compounds prevent the formation of hard, adherent scale. Both Sodium Gluconate and Gluconic Acid increase caustic efficiency—you use less in your compounds yet assure your customers of a more uniform etch.

EXHIBIT C

ONE DE-RUSTED BOLT—Superior caustic rust removal compounds are now possible through the inclusion of Pfizer Gluconic Acid or Sodium Gluconate. In caustic solutions Pfizer Gluconates dissolve rust and prevent after-rust while increasing the efficiency and prolonging the life of the bath.

EXHIBIT D

ONE SHINY PIECE OF STEEL—Pfizer Sodium Gluconate and Gluconic Acid improve the effectiveness of your caustic paint stripping compounds by eliminating the usual brown layer of iron hydroxide. Also they permit freer rinsing of the paint-stripped metal.

THE VERDICT

The verdict is unanimous—Pfizer Gluconic Acid and Sodium Gluconate assure you of compounds with the highest cleaning and etching efficiency. Write Pfizer for complete technical data and information on the proper Gluconate use levels.

CHAS. PFIZER & CO., INC., Chemical Sales Division, 630 Flushing Ave., Brooklyn 6, N. Y. Branch Offices: Clifton, N. J.; Chicago, Ill.; San Francisco, Calif.; Vernon, Calif.; Atlanta, Ga.; Dallas, Tex.

New NYC Health Code Covers Specialties

"THE New York City Health Code", a new body of law enacted recently by the city's board of health, will replace the old Sanitary Code, effective Oct. 1, 1959. Its provisions cover environmental sanitation and other subjects of vital interest to the chemical specialties industries.

Announcing enactment of the new code Dr. Leona Baumgartner, Commissioner of the Department of Health and Chairman of the Board, pointed out that the last revision of the current Sanitary Code dated back to 1914. It contained many obsolete provisions.

The new code consists of approximately 170,000 words, half of them devoted to statutory or legal text and half to annotations relating new portions to corresponding portions in the old code.

The new code is divided into five "titles". Its provisions will be enforced by the Department of Health of the City of New York. The text of the new law will become available this month in a special supplement to the *City Record*.

Environmental sanitation is covered in the fourth title. This includes all regulations governing the handling, sale and distribution of food and drugs, and health aspects of housing and buildings.

Regulations concerning the control of insect and rodent pests, the labeling and handling of commonly used or potentially hazardous substances are carried under this title. Sewage disposal and prevention of water pollution and the regulation of bathing establishments, barber shops and beauty parlors are included under the fourth title. One of the articles under this title embodies regulations designed to control radiologic health hazards.

An entirely new provision deals with chemical food additives. It stipulates that chemical additives may be used in food only after their safety has been established by the manufacturer. Under previous legislation manufacturers were permitted to use an additive until regulatory agencies could prove that it was harmful.

Existing health legislation pertaining to milk and milk products are re-enacted without substantial change under the fourth title. However the board continues to study the problem of milk legislation and expects to reach decisions on new regulations before the end of the year.

The first title outlines the general powers of the Department of Health to make inspections, seizures and condemnations; to issue permits and license businesses and activities governed by the code. Provisions carried in the second title pertain to communicable diseases; to blood banks and transfusions; to the handling of bacterial cultures for research purposes, etc. The third title covers maternal, infant, child and school health, including provisions for the protection of the health of children in the schools. The fifth title comprises regulations covering records and vital statistics.

Policies and regulations previously embodied in the New York City Sanitary Code have often served as model for basic health legislation in other communities. Because the new Health Code is expected to have substantial influence on the writing and revision of public health laws elsewhere the Rockefeller Brothers Fund and and the W. K. Kellog Foundation joined New York City's Board of Estimate in providing funds to make the drafting possible. Work on the new code started Oct. 1, 1955.

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CSMA Antifreeze Survey

Results of the fourth annual survey of antifreeze sales for 1958 were released recently by the Chemical Specialties Manufacturers Association, New York. Total 1958 sales were 110.2 million gallons, compared with 106.8 million gallons in 1957. Of the total for 1958, 94.6 million gallons, or 85.9 per cent, were ethylene glycol (nonvolatile) type products, and 15.6 million gallons, or 14.1 per cent, were methanol (volatile) type products.

The survey was conducted by CSMA through Ernst and Ernst, New York, certified public accountants. Twelve antifreeze manufacturers, accounting for 95 per cent of U. S. production responded to CSMA questionnaires.

The 12 participating companies were:

Allied Chemical & Dye Corp., Calcasieu Chemical Corp., Celanese Corp. of America, Commercial Solvents Corp., Dow Chemical Co., General Aniline & Film Corp., Jefferson Chemical Co., National Carbon Co. and Union Carbide Chemicals Co., divisions of Union Carbide Corp., Olin Mathieson Chemical Corp., Spencer Chemical Co., Wyandotte Chemicals Corp., Zerone-Zerex section of E. I. du Pont de Nemours & Co.

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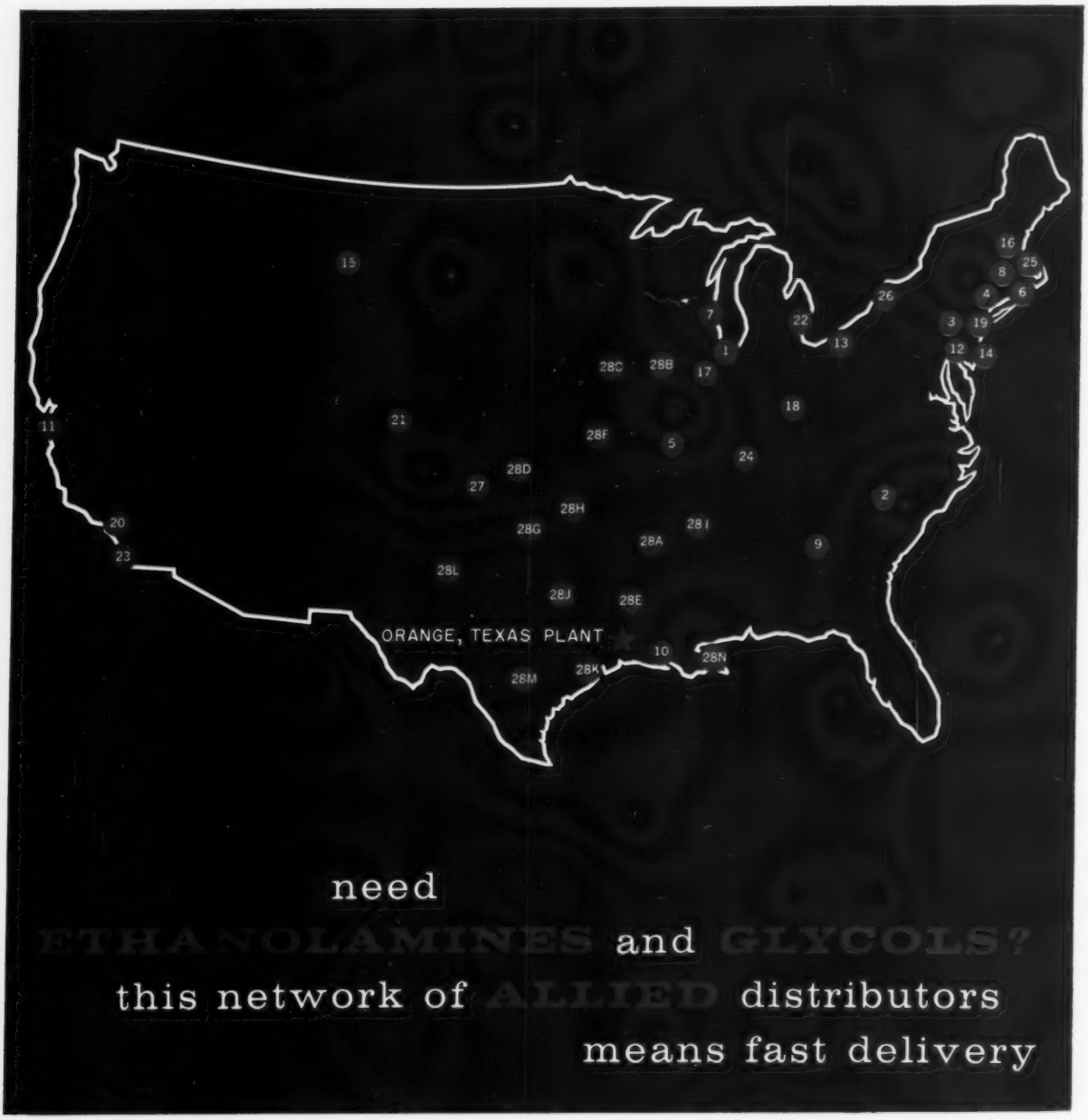
Varian Joins Lehn & Fink

Robert Varian has been appointed coordinator in the recently established new products department of Lehn & Fink Products Corp., New York, it was announced recently by T. S. Harrison, manager of new products.

Most recently manager of the promotion department at Revlon, New York, Mr. Varian was previously a field sales analyst and assistant to the national sales manager for grocery outlets for Lever Brothers Co., New York.

Robert Varian





Wherever you are, chances are there's a distributor of Allied ethanolamines and glycols nearby. To serve you promptly and economically, local drum stocks are maintained by the distributors listed at right. Drum and tank car quantities are also available from Allied's Orange Texas plant. Shouldn't you make a note right now of the source nearest you?

1. **Acid Products Co., Inc.**—Chicago, Ill.
2. **Acme Soap & Chemical Co.**—Charlotte, N. C.
3. **Aetna Color & Chemical Co.**—East Paterson, N. J.
4. **Apothecaries Hall Co.**—Waterbury, Conn.
5. **Harry A. Baumstark & Co.**—St. Louis, Mo.
6. **T. H. Baylis Co.**—Providence, R. I.
7. **Benlo Chemicals**—Milwaukee, Wisc.
8. **Chemical Sales & Service Co.**—Worcester, Mass.
9. **Chemical Services, Inc.**—Atlanta, Ga.
10. **Coastal Chemical Co.**—Abbeville, La.
11. **Cole & De Graf**—San Francisco, Calif.
12. **Geo. S. Coyne Chemical Co.**—Philadelphia, Pa.
13. **Crowley-Thompson Chemical Co.**—Cleveland, Ohio
14. **Delarich Corp.**—Delawanna, N. J.
15. **Dyce Sales & Engineering Service Co.**—Billings, Mont.
16. **Freeport Chemical Distributors**—Cambridge, Mass.
17. **Great Lakes Chemical Co.**—Cicero, Ill.
18. **Herbert Chemical Co.**—Cincinnati, Ohio
19. **Independent Chemical Co.**—Brooklyn, N. Y.
20. **Los Angeles Chemical Co.**—South Gate, Calif.
21. **Mine & Smelter Supply Co.**—Denver, Colo.
22. **O'Connor Chemicals, Inc.**—Detroit, Mich.
23. **Pacific Polymers**—Hawthorne, Calif.
24. **P B & S Chemical Co.**—Henderson, Ky.
25. **Plyco Products, Inc.**—E. Boston, Mass.
26. **Riverside Chemical Co.**—No. Tonawanda, N. Y.
27. **Southwest Gas Equipment Co.**—Liberal, Kan.
28. **Thompson-Hayward Chemical Co.** (All offices listed below are Thompson-Hayward)

28A—No. Little Rock, Ark. **28B**—Davenport, Ia. **28C**—Des Moines, Ia. **28D**—Wichita, Kan. **28E**—Shreveport, La. **28F**—Kansas City, Mo. **28G**—Oklahoma City, Okla. **28H**—Tulsa, Okla. **28I**—Memphis, Tenn. **28J**—Dallas, Texas. **28K**—Houston, Texas. **28L**—Lubbock, Texas. **28M**—San Antonio, Tex. **28N**—New Orleans, La.

BASIC TO AMERICA'S PROGRESS

Allied Chemical

NITROGEN DIVISION

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CSC Elects Wheeler Pres.

Maynard C. Wheeler was elected president of Commercial Solvents Corp., New York, last



Maynard C. Wheeler

month. He had been acting president since the resignation of J. Albert Woods in February. Mr. Woods continues as a consultant.

With the firm since 1923, Mr. Wheeler was formerly senior vice-president. He was appointed a vice-president in 1945, and has been a director since 1950.

Also elected were William S. Leonhardt as financial vice-president and treasurer, and Jeremiah Milbank, Jr., as chairman of the executive committee. Mr. Leonhardt joined Commercial Solvents 20 years ago. He has been treasurer since 1957.

Also re-elected a director, Mr. Milbank has been a member of the board and executive committee since 1953.

—★—

ASTM Soap Standards

A compilation of 40 standard specifications, methods of test, and definitions relating to soap and other detergents has just been published by the American Society for Testing Materials. The contents of the 256-page paper covered book represent the work to date of ASTM Committee D-12 on Soaps and Other Detergents, which was organized in 1936.

Included are 17 specifications for soaps and soap products, nine specifications for various alkaline detergents, and 20 methods of analysis covering soaps and other detergents. Definitions of terms and general testing methods applying to these materials are also included. Anyone concerned with the manufacture, selling, purchasing or use of cleaning materials should find this compilation helpful.

The book is available from ASTM headquarters at 1916 Race Street, Philadelphia 3, at $3.50 a copy. Price to ASTM members is $2.80.

—★—

Delta Becomes Corporation

Delta Chemical Co., Memphis, Tenn., manufacturers of industrial cleaners, changed its status Mar. 31 from a partnership to a Tennessee corporation. Certain assets and liabilities of the partnership, made up of Harry Cooper, Alexander Handleman, and Leo Schneider were transferred on that date to Delta Chemical Co., a corporation. Delta continues its operation as before.

—★—

Perry Appoints Rep.

Perry Brothers, Inc., Woodside, N. Y., manufacturing perfume chemists, has announced the appointment of G. W. Radford Sales, Montreal, Quebec, as its Canadian representative.

G. W. Radford, head of the sales organization, was formerly associated with the Green Cross products division of Sherwin-Williams Co., and has been in the chemical specialties field in the U. S. and Canada for over 20 years.

G. W. Radford



GAF Names Stevens

Chapin E. Stevens has been appointed director of commercial development of the dyestuff and



Chapin E. Stevens

chemical division of General Aniline & Film Corp., New York, Harold G. Shelton, division general manager announced last month. Division manager of sales development since 1956, Dr. Stevens joined General Aniline in 1942. He replaces Jesse Werner who was recently appointed a vice-president of the corporation.

—★—

Hooker Sales Increase

Net sales and net income for the quarter ended Feb. 28 were reported last month by Hooker Chemical Corp., Niagara Falls, N. Y., at $34,898,000 and $3,198,500, respectively. Earnings per common share amounted to 43 cents compared with 34 cents for the same period a year ago. Sales for the corresponding quarter in 1958 were $29,005,500 and net income was $2,530,700. The results for both periods include the operations of Shea Chemical Corp. which was acquired by Hooker last May.

—★—

GE Silicone Manager

Robert T. Daily has been appointed manager of marketing for the silicone products department of General Electric Co. in Waterford, N. Y. Mr. Daily replaces Jerome T. Coe who was named department general manager in February.

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the right odor for
aerosol room deodorants

Our aerosol laboratory
has developed a series
of especially adjusted
perfumes for use
in room sprays

Write us for prices
and samples.

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Solventol Elects Huffman

Robert W. Huffman has been elected president and general manager of Solventol Chemical Products, Inc., Detroit. Formerly executive vice-president, Mr. Huffman succeeds Howard Downs, who resigned to join Downs & Wiles, Wabash, Ind.



Robert W. Huffman

Solventol specializes in detergent chemistry and manufactures a line of cleaning compounds for use in the metal-working industry including "Solventol" di-phase, alkaline, and aluminum cleaners and related products, and electrolytic cleaners and paint strippers. The firm also formulates chemical cleaners on a custom basis for special industrial cleaning problems.

—★—

Wyandotte Shows Gain

Wyandotte Chemicals Corp., Wyandotte, Mich., reported a net income of $744,498 for the first three months of this year compared with a net loss of $113,983 in the corresponding period in 1958. Earnings per common share this year were 43 cents. Net sales amounted to $19,582,144 compared with $16,789,208 last year.

—★—

Progressive Changes Name

Progressive Color and Chemical Co., 350 Fifth Ave., New York, has changed its name to Hostachem Corp. Personnel of the firm and its location remain the same.

Operating under the Progressive name for the past 40 years, the company decided to identify itself more closely with the origin of the products it distributes for Farbewerke Hoechst AG., Frankfurt-Hoechst, West Germany. The word "Hosta" in the company's new name is the ancient Roman version "Hoechst," the name of a suburb of Frankfurt where the European firm was founded almost 100 years ago and where it is currently located.

As in the past, Hostachem Corp. continues as distributors in the United States for Farbewerke Hoechst AG. and its subsidiary companies.

—★—

Mathieson Earnings Rise

First quarter 1959 earnings of Olin Mathieson Chemical Corp., Baltimore, Md., increased by 43 per cent from $4,473,000, or 33 cents a share, in the first three months of 1958, to $6,395,000, or 48 cents a share, this year. Sales for the period amounted to $159,909,000 compared with $127,625,000 last year.

More Detergent Advertising

Investment in television advertising last year for six heavy-duty liquid detergents totalled $14.7 million, a 232 per cent increase over 1957, the Television Bureau of Advertising, Inc., New York, reported last month.

The leading investor was Adell Chemical Co., Holyoke, Mass., which spent $12.3 million, nearly its entire advertising budget, on spot commercials for "Lestoil." In 1957 Adell purchased $4.1 million worth of television time. Second largest spender was Lever Brothers Co., New York, with $740,000 for "Handy Andy" followed by Texize Chemical Co., Greenville, S. C., "Texize" detergent, $645,000 (up 365 per cent over 1957); Procter & Gamble Co., Cincinnati, "Mr. Clean," $421,300; Colgate-Palmolive Co., New York, "Genie," $319,800; S. C. Johnson & Son, Inc., Racine, Wis., "Bravo," $156,030; and Barcolene, Inc., Boston, "Barcolene," $114,400.

Fritzsche "Reconstitutes" Bergamot Oil

A NEW departure in the synthesis of essential oils is being introduced by Fritzsche Brothers, Inc., 76 Ninth Avenue, New York 11. The firm offers in limited commercial quantities a "Reconstituted Oil" of bergamot. According to Fritzsche ". . . . this is the first essential oil ever to be successfully produced entirely by chemical synthesis in commercially available quantities". The feat was accomplished by the use of advanced analytical techniques (infrared spectrophotometry, and vapor phase and liquid solid chromatography) to break down the natural oil's complex chemical structure. Knowledge of the building bricks made it possible to reconstruct a product which, according to the manufacturer matches the natural oil.

Bergamot was chosen as the first oil to be reconstructed by this method because of the great fluctuations in price and availability stemming from the limited size and climatic vagaries of its natural habitat in the Italian hill country.

"F. B. Reconstituted" oil of bergamot is being offered at less than half the price of the natural material. Being a synthetic it is possible to guarantee its constant and uniform quality. In certain applications it offers property advantages over the natural oil. Being more soluble in fluorinated hydrocarbon propellants than the natural bergamot, it eliminates the hazard of separation of insoluble materials and minimizes the possibility of valve clogging. Incorporated into white soaps at the rate of one per cent the reconstituted bergamot does not cause the initial darkening which is produced by its natural counter part.

Further details on "F. B. Reconstituted Oil" bergamot and free samples are available from Fritzsche's General Sales Division.

LATEST TECHNICAL BOOKS

CHEMICAL SPECIALTIES • DETERGENTS • SOAPS
INSECTICIDES • DISINFECTANTS • TOILETRIES

☐ 1. **Analysis of Insecticides and Acaricides,** by Gunther-Blinn. 706 pages, 72 illus., 50 tables. Complete treatise on sampling, isolation and determination, including residue method. Price: $15.00.

☐ 2. **Organic Solvents,** completely revised second edition by Riddick and Toops. 560 pages including tables of physical properties of 254 solvents. Covers physical properties and methods of purification. Price: $10.00.

☐ 3. **Surface Active Agents and Detergents,** by Schwartz-Perry. Two volumes. Volume I: 590 pages, 51 illus., 4 tables. Covers processes for synthesizing and manufacturing surface active agents, physical chemistry of surface active agents and practical applications of surface active agents. Price: $13.50. Volume II: Approximately 860 pages, approximately 26 illus. and tables. Covers processing for synthesizing and manufacturing surfactants, special function surfactants and compositions, the physical and colloidal chemistry of surfactants and practical applications of surfactants. Price: $19.50.

☐ 4. **Detergent Evaluation and Testing,** by Jay C. Harris. 220 pages, 26 illus., 15 tables. A critical selection of methods and procedures for the testing of detergents. Price: $4.50.

☐ 5. **Organic Insecticides,** by R. L. Metcalf. 402 pages, 7 illus., 70 tables. Covers most organic insecticides, their chemistry and their mode of action. Price: $10.00.

☐ 6. **Advances in Pest Control Research,** edited by R. L. Metcalf. Volume I: 522 pages, 11 illus., 13 tables. Covers the most recent advances in all phases of the applied science of pest control. Price $12.50. (Volume II in preparation)

☐ 7. **Modern Chemical Specialties,** by Milton Lesser. 514 pages, 22 illus. Covers formulation, properties and uses of some fifty types of household, industrial and automotive chemical specialties. Price: $7.25.

☐ 8. **Handbook of Cosmetic Materials,** by Greenberg-Lester. 467 pages. Covers the properties, uses and toxic and dermatological actions of over 1,000 materials selected in response to a questionnaire sent to cosmetic manufacturers. Includes a chapter on the skin by Howard W. Haggard, Director, Applied Physiology Laboratory, Yale University. Price: $13.50

☐ 9. **Soap Manufacture,** by Davidson et al, in two volumes. Volume I: 537 pages, 66 illus., 118 tables. Covers the history of the soap industry, theoretical principles of soap manufacture, raw materials of soap manufacture and the fatty raw materials. Price: $13.50. (Volume II in preparation)

☐ 10. **Cosmetics: Science and Technology,** edited by Edward Sagarin. 1453 pages, 138 illus., 107 tables. Covers origin, development of cosmetic science and discusses individual products such as hand creams, suntan preparations, skin lighteners, shaving soaps and creams, nail polishes and removers, deodorants, aerosol cosmetics and many other cosmetic and toiletry products. Price: $27.50.

☐ 11. **Industrial Oil and Fat Products,** by Alton E. Bailey. 991 pages, 164 illus. 133 tables. Covers the nature of fats and oils, their composition and structure; raw materials; industrial utilization. Price: $18.00.

☐ 12. **Fatty Acids,** by Klare S. Markley. 678 pages, 81 illus., 163 tables. The chemistry and physical properties of fats and waxes. Price: $14.50.

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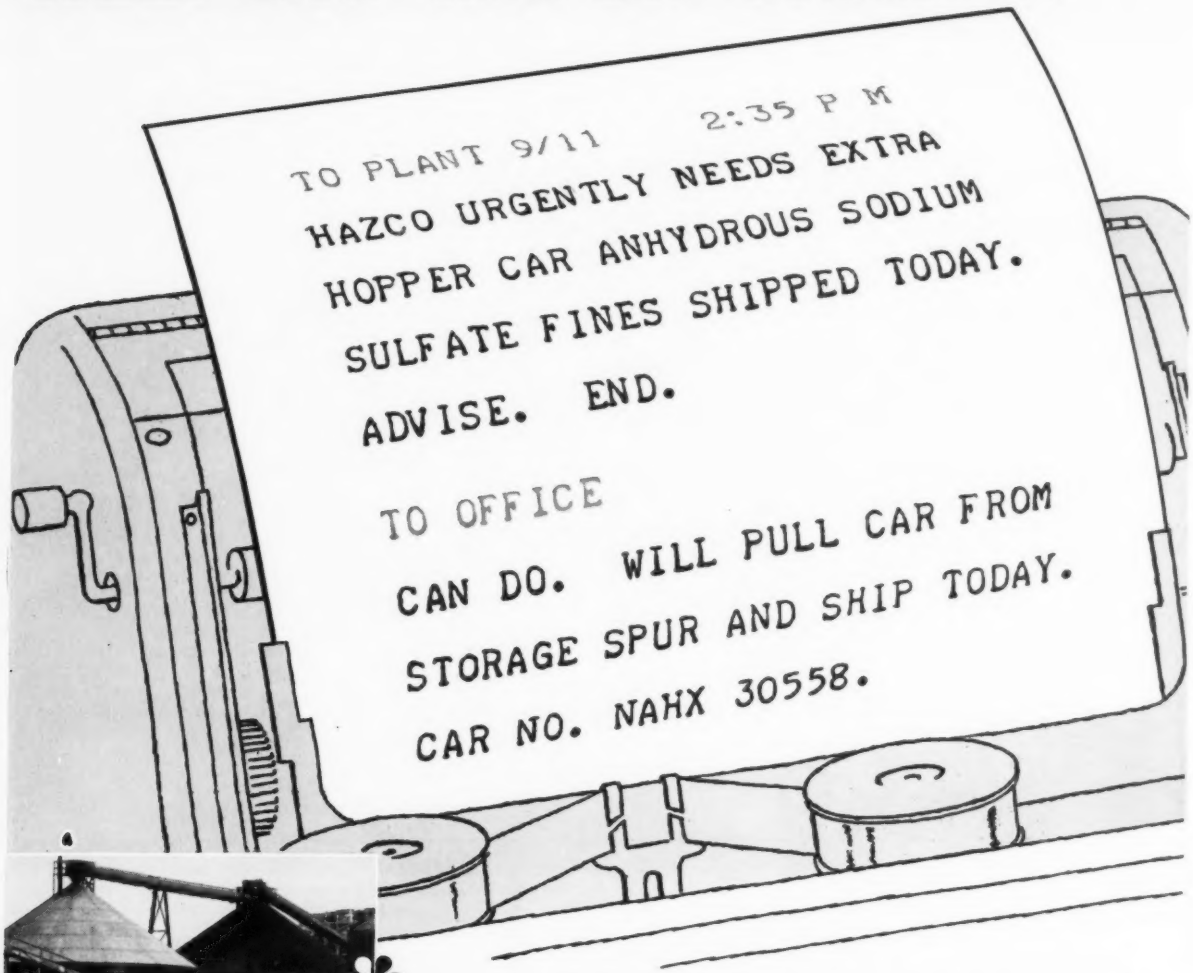
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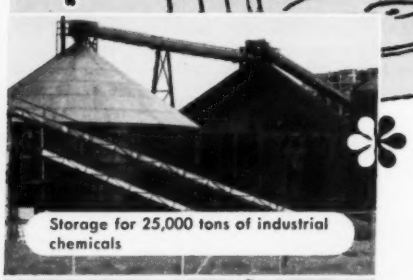
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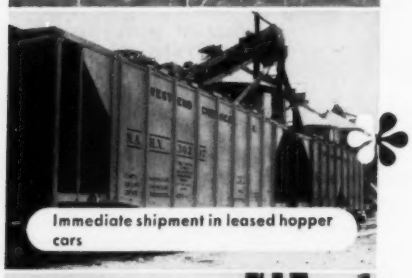
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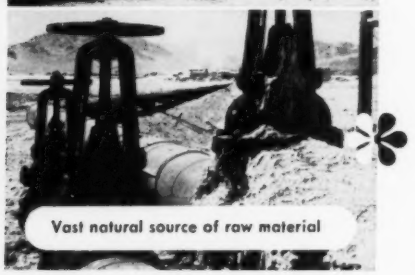
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Lehrman Elected at Record NSSA Meeting

A SANITARY supply distributor from Harrisburg, Pa., was elected president of the National Sanitary Supply Assn., at its 36th anual trade show and convention in Chicago, April 12-15. The new NSSA president, Shim D. Lehrman of A. J. Lehrman & Sons, Harrisburg, served as vice-president last year. He is succeeded in that post by Herbert J. L. Baum, Mipro Metal Products Co., South San Francisco producer of metal cabinets and receptacles.

A new secretary of the board of directors, John N. Bockstanz of Bockstanz Brothers Co., a Detroit distributor, was elected to succeed Albert I. Mack of Easterday Supply Co., San Francisco, who had held the post for two terms.

Jeffrey L. Fried of Walton-March, Highland Park, Ill., chemical specialties firm, was reelected treasurer.

Four new district directors, all distributors, were chosen. They are: Henry J. Reyns, Reyns Supply Co., Newburgh, N. Y., director for district one; A. B. Meyer, H. B. Meyer & Son, Dallas, Tex., director for district five; Wilfred R. Harris, Harris Janitor Supply Co., Sioux City, Ia., director for district six and Leo Burwick, American Sanitary Products Co., Denver, director for district seven.

In addition, Robert B. Levin, Standard Chemical Co., Miami, Fla., was named director at large.

The board of directors of NSSA voted to renew for another two years the contract of Leo J. Kelly, executive vice-president of the organization. His son, Bernard, continues as executive secretary.

What is believed to have been a record number of exhibitors —186—occupied 260 booths at the four day trade show. All types of sanitation and maintenance chemical specialties, including soaps and detergents, and equipment for applying or dispensing these products were displayed in an exhibit area of 45,000 square feet.



Shim Lehrman

Earlier and preliminary figindicated that attendance at the show was the highest in the history of the National Sanitary Supply Association.

Featured speakers at the discussion sessions of the convention included Bob Bales, a sales consultant and lecturer, and three professors from the Northwestern University Graduate School of Business.

At the convention it was revealed by retiring president Harold J. Pond, head of Advance Floor Machine Co., Minneapolis, that NSSA won an award of the U. S. Chamber of Commerce for "outstanding national achievement" for medium size trade associations. The award was based on NSSA's "Modern Cleaning Methods" home study course for custodians and maintenance supervisors. The Chamber award was made in Washington, D. C., on April 27.

A new 120-page Custodial Training School Manual is now being completed by the National Sanitary Suply Assn. for use by its distributor members. Slides of the outstanding features of the manual were shown and explained during the convention by Edward Small, industry promotion director of NSSA.

A second "Business Yardstick" survey of sanitary supply distributor operations will be undertaken this year by Cook Research Co., Granada Hills, Calif., it was announced at the NSSA meeting.

The 1960 meeting of the National Sanitary Supply Association will be held at the Hotel Fontainebleau, Miami Beach, Fla., May 22-25.

—★—

Hazel Bishop Names Ochs

Edward A. Ochs was advanced last month to marketing vice-president of Hazel Bishop, Inc., New York. Previously general sales manager of the company, Mr. Ochs is now responsible for developing and coordinating all marketing functions of the firm.

—★—

Senate Bill Hearings Held

Hearings ended early last month before the Anti-trust and Monopoly Legislation Subcommittee of the Senate Judiciary Committee on the O'Mahoney Bill—S. 215 that would require certain large corporations to give advance notification to selected government agencies before raising prices. The bill provides that where eight or less corporations sell 50 per cent or more of the total annual sales in the U. S. of any specific product, prices of such products may not be increased until public notice of the proposed increase is given to the Federal Trade Commission, Congress, and the Attorney General and published in the *Federal Register* and *Congressional Record*. A 30 day waiting period must follow this notification.

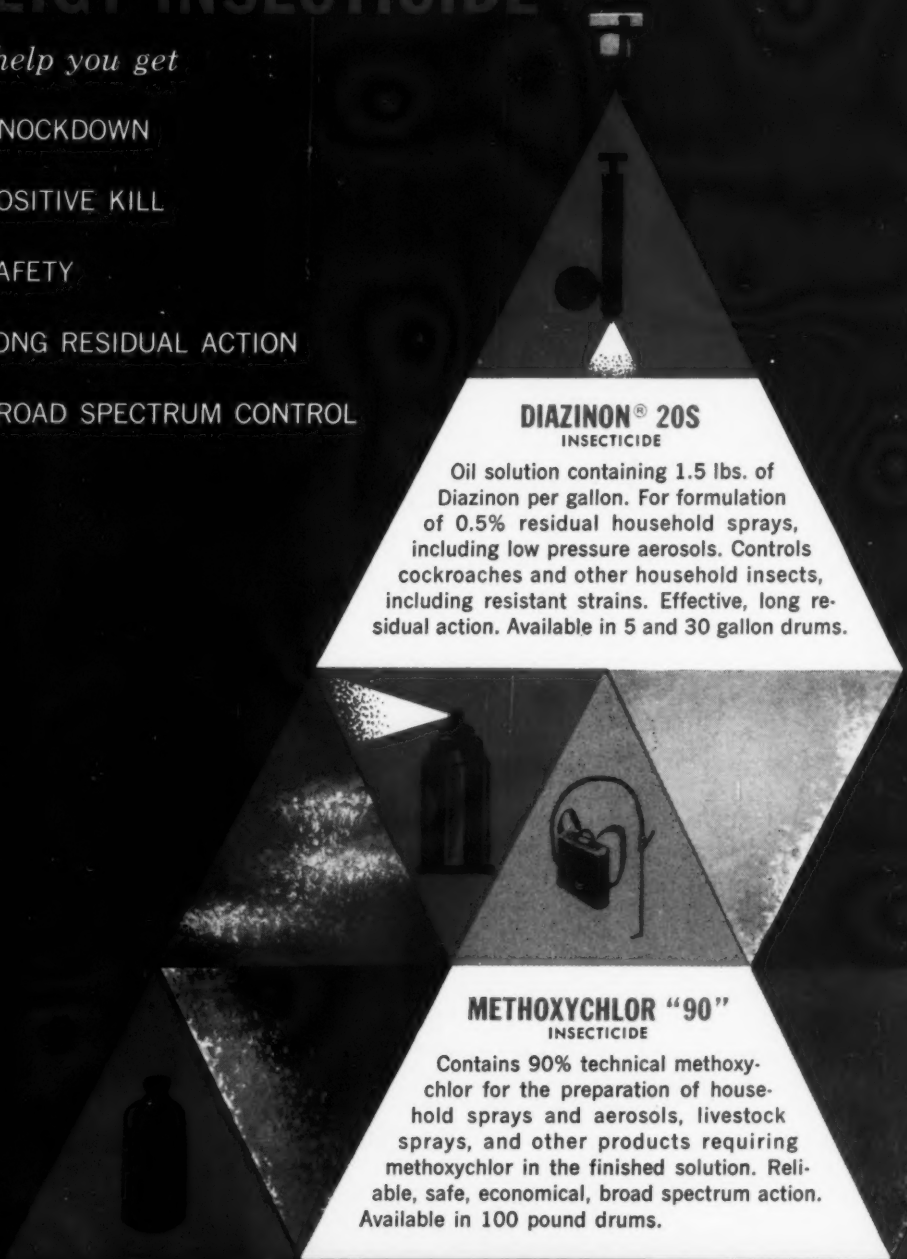
Any corporation in this group which has capital, surplus, and undivided profits in excess of $10 million must give notice, according to the bill. The FTC is directed to determine the lines of commerce and the corporations to which the law would apply. Public hearings on proposed price increases would be held by the FTC and the Attorney General to determine their justification and effect upon competition and the national economy. The bill calls for penalties not to exceed $50,000.

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- KNOCKDOWN
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DIAZINON® 20S
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Oil solution containing 1.5 lbs. of Diazinon per gallon. For formulation of 0.5% residual household sprays, including low pressure aerosols. Controls cockroaches and other household insects, including resistant strains. Effective, long residual action. Available in 5 and 30 gallon drums.

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Contains 90% technical methoxychlor for the preparation of household sprays and aerosols, livestock sprays, and other products requiring methoxychlor in the finished solution. Reliable, safe, economical, broad spectrum action. Available in 100 pound drums.

ORIGINATORS OF DDT INSECTICIDES

GEIGY AGRICULTURAL CHEMICALS • Division of Geigy Chemical Corporation • Saw Mill River Road, Ardsley, N.Y.



Andre Simonart, left, European specialist in skin research, examines the result of an experiment during his tour of Colgate-Palmolive Co.'s biological research laboratory on the New Brunswick, N. J., campus of Rutgers University. With him are Joseph Migliarese, laboratory director, center, and Eugene Bernstein of lab staff.

Penick Appoints Seven

S. B. Penick & Co., New York, recently made seven personnel appointments as part of a realignment of its sales and service divisions.

Barclay E. MacKinnon, formerly vice-president of New York Quinine & Chemical Works, Inc., has been appointed vice-president of the company in charge of the new NYQ chemical division. Harold A. Meyer, vice-president, is now in charge of the botanical and allied products division, with William W. Bell, vice-president, named assistant manager in addition to his responsibilities for the division's domestic products and all cultivation projects.

Frank Seeland, vice-president, continues as manager of the newly named farm chemical and insecticide division, which has added antibiotic feed supplements to its line.

Former vice-president of New York Quinine & Chemical Works, Inc., Rudy F. Neptun is now director of sales coordination for the entire Penick organization. He has charge of all outside sales representatives as well as coordination of the company's three marketing divisions. James J. Verda, previously assistant sales manager for New York Quinine, has been named sales manager of the NYQ chemical division.

—★—

Babbitt Appoints Two

Two appointments in the Charles Antell division of B. T. Babbitt, Inc., New York, were announced last month by A. N. LaBelle, vice-president of Babbitt. John Grady, formerly with the Kay-Daumit division of Colgate-Palmolive Co., New York, has been named administrative assistant to Mr. LaBelle, and Howard Ottley, previously an assistant product manager in Colgate's toilet articles division, is in the newly created position of Charles Antell products manager.

—★—

Diamond Names Chastain

William N. Chastain has been appointed sales-service representative for Diamond Alkali Co., Cleveland, in the laundry, dry cleaning, dairy and soft drink bottling industries, R. B. Perry, manager of the southeastern district sales office, announced last month. With Diamond Alkali since last year, Mr. Chastain's territory includes Alabama and part of northwest Florida.

Simonart at Colgate Lab

Andre Simonart, head of the pharmacology department of the University of Louvain, Belgium, and director of the Institute of Experimental Therapy and Pharmacology at the university visited the biological research laboratory of Colgate-Palmolive Co., New York, last month which is located on the New Brunswick, N. J., campus of Rutgers University. Dr. Simonart's visit was part of a tour of leading scientific centers in the east which was sponsored by the Armed Forces Research Command.

In a seminar for the Colgate scientists who are conducting extensive basic studies of skin problems, Dr. Simonart described his recent experiments on reactions to burns. Taking part in the discussion were Joseph Migliarese, director of the laboratory, Frederick Benjamin, Eugene Bernstein, Elizabeth Anderson, and Gerbert Rubell. Dr. Simonart, a leading specialist in skin research, has published more than 100 articles and is an authority on thermal burns of the skin.

—★—

Hercules Re-elects Officers

The board of directors of Hercules Powder Co., Wilmington, Del., re-elected all company officers at their recent annual reorganization meeting.

Officers include: Albert E. Forster, president and chairman; Wyly M. Billing, John J. B. Fulenwider, John R. L. Johnson, Jr., Paul Mayfield, Edward B. Morrow, vice-presidents; J. H. Tyler McConnell, secretary; and John E. Goodman, treasurer. Members of the executive committee were also re-elected and include: Mr. Forster as chairman, and Messrs. Billing, Fulenwider, Johnson, Mayfield, and Morrow.

The directors declared a regular quarterly dividend of one and one quarter per cent, equal to $1.15 a share, on its preferred stock, payable May 15 to stockholders of record May 1.

. . . now available in truckload shipments

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ETHYLENE CARBONATE
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99% MINIMUM PURITY



Jefferson has been a leader in the commercial development of these alkylene carbonates and, in order to meet the growing demand for these highly versatile materials, now maintains a minimum inventory of 10,000 pounds of each. The purity of both products is in excess of 99% and truckload quantities are available on three weeks' notice.

These carbonates possess outstanding solvent properties for numerous polymeric and other relatively insoluble organic compounds. Their miscibility with many common solvents suggests selective or extractive solvent applications.

Carbamates are formed easily with ammonia and aliphatic amines, leading to applications in agricultural chemicals, plasticizers and resins. To effect alkoxylation, ethylene carbonate and propylene carbonate can be frequently substituted where the respective oxides are inconvenient to handle.

Because of its ability to produce carbon dioxide simultaneously with its reaction with many different substances, ethylene carbonate may find application as a blowing agent for plastic or elastomeric compositions. The low viscosity, high boiling point, and low freezing point of propylene carbonate suggest its use in hydraulic and other functional fluids.

Samples of ethylene carbonate and propylene carbonate will be supplied on request. Write for Jefferson technical bulletins on these carbonates to Jefferson Chemical Company, Inc., 1121 Walker Avenue, Houston 2, Texas.

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Ethylene Carbonate and Propylene Carbonate • Caustic Potash • Caustic Soda
Soda Ash • Sodium Bicarbonate

Essential Chemicals From Hydrocarbon Sources

131

Babbitt Names Gaines

William H. Gaines has been appointed general sales manager of the Charles Antell division of B. T.



William H. Gaines

Babbitt, Inc., New York, A. N. LaBelle, Babbitt vice-president announced last month.

Previously Mr. Gaines was sales manager of the Kay Daumit division of Colgate-Palmolive Co., New York, and has had many years experience in the drug and cosmetic industry. Mr. LaBelle noted that the appointment was the first step in the company's plans to strengthen the merchandising and marketing organization of the recently acquired division.

—★—

Ertel Appoints Mockridge

Oscar A. Mockridge, Jr., has been named sales manager of the New York office of Ertel Engineering Corp., Kingston, N.Y. Most recently a sales and service engineer for Eimco Corp. at their eastern district office in New York, Mr. Mockridge has had 15 years' experience in both pressure and vacuum filtration.

—★—

Hercules Aids Colleges

Hercules Powder Co., Wilmington, Del., is distributing approximately $100,000 in unrestricted grants-in-aid to nearly 30 colleges and universities. The grants are part of the company's program of financial aid to educational institutions. They are unrestricted and, under the program, complete freedom in the use of the funds is given to the heads of departments of chemistry, chemical engineering, physics, mechanical engineering, and others.

In expressing Hercules views about the program, Albert E. Forster, president and board chairman, noted that the company believes that everything possible should be done to strengthen the American educational system and that educators themselves know best what is needed.

Dow Changes Product Name

Dow Chemical Co., Midland, Mich., has changed the name of its ethylene glycol phenyl ether from "Dowanol 1" to "Dowanol EP." According to Dow the material has been improved, and is now essentially a colorless material.

The name change aids chemical identification of the product and follows a nomenclature pattern previously adopted for its aliphatic glycol ethers, Dow says.

Cos. Chemists Chairmen

Theodore Ostrowski of Germaine-Monteil Cosmetiques Corp., New York, and chairman of the New York Chapter of the Society of Cosmetic Chemists, recently appointed the following committee chairmen for 1959:

Arthur J. Cohane, Leberco Laboratories, Roselle Park, N. J., program; Robert B. Warfield, Bristol-Myers Co., New York, house; Irving Colbert, N. I. Malmstrom & Co., Brooklyn, N. Y., membership; Irving Klapp, Pharmaceuticals, Inc., and The J. B. Williams Co., Cranford, N. J., publicity; Robert J. Schiraldi, Colgate-Palmolive Co., New York, education; George Kachajian, Dow Corning Corp., New York, entertainment; Nicholas J. Accousti, R. H. Macy & Co., New York, by-laws; Jean W. Baer, Pennsalt Chemicals Corp., New York, hospitality; Martin Rieger '59, Warner - Lambert Research Institute, Morris Plains, N. J., and Herbert Edelstein '60, Bonat & Bonat, Inc., West Paterson, N. J., interprofessional relations; and Harry Isacoff, van Ameringen-Haebler, Inc., New York, ex-officio.

At a recent meeting of the N. Y. chapter, M. F. Nelson of the radiotracer laboratory, Atlas Powder Co., Wilmington, Del., delivered a paper titled "A Review of the Uses of Radioisotopes in Detergent and Cosmetic Chemistry." He discussed how radioisotopes have been used in skin studies, oral cavity research, human hair studies, in methods developed for detergent evaluation, in astringents, and in the metabolic fate of formulation additives in order to facilitate clearance of the materials by the Food and Drug Administration.

Executive and committee chairmen of the New York Chapter of the Society of Cosmetic Chemists include, seated, left to right: Martin Katz, treasurer; Theodore Ostrowski, chairman; Saul Bell, secretary; and John Longfellow, chairman-elect. Committee chairmen and the committees they head include: standing, left to right, Herbert Edelstein, interprofessional relations; Irving Klapp, publicity; Jean Baer, hospitality; Robert Schiraldi education; Arthur Cohane, program; George Kachajian, entertainment; Irving Colbert, membership; Martin Rieger, interprofessional relations; Harry Isacoff, ex-officio; and Nicholas Accousti, by-laws. Not in photo is Robert Warfield, house.



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Half the price of natural oil . . .

Available at all times in any quantity . . .

Constant uniform quality, free of all impurities . . .

Fixation that of natural oil . . .

Improved solubility — no separation, hazing or sedimentation . . .

More stable than natural oil.

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F. B. RECONSTITUTED OIL* BERGAMOT

IS RECOMMENDED



for use in SOAPS, PERFUMES, CREAMS, LOTIONS, TOILETRIES and COSMETICS as well as in AEROSOLS where possibility of valve clogging is avoided by its improved solubility. This remarkable new, completely synthetic product — *it contains not a trace of the natural oil*—is fully described with suggestions for use in the convenient file-folder now available upon request. Write for copy . . . and for FREE test sample, too, if you'd like to try it.

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Branch Offices and *Stocks: Atlanta, Ga., Boston, Mass., *Chicago, Ill., Cincinnati, Ohio, Greensboro, N. C., *Los Angeles, Cal., Philadelphia, Pa., San Francisco, Cal., St. Louis, Mo., Montreal and *Toronto, Canada; *Mexico, D. F. and *Buenos Aires, Argentina. **Factories:** Clifton, N. J. and Buenos Aires, Argentina.

Holliday Joins Chesebrough

William M. Holliday has been named manager of the Clinton, Conn., research laboratories of



William M. Holliday

Chesebrough-Pond's, Inc., N. Y., Henry R. Kreider, director of research, announced last month.

Dr. Holliday was with Procter & Gamble Co., Cincinnati, for the past seven years, most recently as head of the new products group of the toilet goods division laboratory.

—★—

Brillo May Split Stock

Directors of Brillo Manufacturing Co., Brooklyn, N. Y., proposed a three-for-one split of its common stock last month through the issuance of two additional shares for each one held. A special meeting of stockholders will be called "in the near future," Milton B. Loeb, president, stated, to vote on the proposal. If approved, Brillo's outstanding shares would be increased from 144,210 to 432,630 shares. Authorized stock would be raised from 200,000 to 500,000 shares.

—★—

Breck Advertising Honored

Six separate awards for advertising and point-of-sale material were won recently by John H. Breck, Inc., Springfield, Mass., in the Seventh Annual Merit Awards Competition conducted by the Advertising Club of Springfield. Breck took first prize in the "integrated campaigns" category with an entry which included samples of its television commercials, magazine, newspaper, and trade advertisements, bus cards, and catalogs.

Other awards were received for black and white newspaper advertisements; point-of-sale material in the form of a four-color floor display stand; and television commercials. In addition, the firm received two honorable mentions for its other integrated campaigns.

A total of 176 entries were submitted in the competition which was open to all firms and advertising agencies in western and northern Massachusetts and northern Connecticut.

—★—

Aniline Profits Increase

Profits of General Aniline & Film Corp., New York, for the first quarter of 1959 increased to $1,466,000 compared with $797,000 in 1958. Sales for the period were $36,834,000 compared with $32,155,000 last year. The company recently reported record sales of $142,790,000 and net profit of $5,745,000 for 1958 compared with sales of $132,428,000 and a net profit of $5,385,000 the previous year.

Antara Names Distributor

Dryco Chemical Co., Baltimore, Md., has been appointed a distributor for Antara chemicals, a sales division of General Aniline & Film Corp., New York. Dryco, a division of Dryden Oil Co., will deliver Antara's line of surfactants, emulsifying detergents, and related chemicals to customers in the Maryland, metropolitan Baltimore, and Washington, D. C., areas.

—★—

PMA Golf Winners

Winners of the Pharmaceutical Manufacturers Assn. golf tournament, held during PMA's annual meeting in Boca Raton, Fla., last month, included the following:

C. H. Slater, J. T. Baker Chemical Co., Phillipsburg, N. J., qualifying low gross; E. H. Sellmer, Wilson Laboratories, Chicago, tournament low gross and R. J. Jaeggi, *American Druggist*, low net.

Low gross winners in each of eight flights included: E. E. Aldrich, Rexall Drug Co., Los Angeles; H. J. O'Neill, Clark-O'Neill, Inc., Fairview, N. J.; J. Vandewater, R. W. Greeff Co., New York; C. D. Siverd, American Cyanamid Co., New York; S. E. Ruch, Pitman-Moore Co., Indianapolis; G. Rieveschl, Parke Davis & Co., Detroit; C. F. Miles, Ames Co., Elkhart, Ind., and J. Stephens, guest of J. T. Baker Chemical Co.

Albert F. Beaupre, left, chairman of the Seventh Annual Merits Awards competition conducted by the Advertising Club of Springfield, Mass., presents award for excellence in black and white newspaper advertising to: left to right, Edward J. Breck, president and advertising manager of John H. Breck, Inc., Springfield, William J. Slattery, product advertising manager for Breck, and Donald Gross, account executive, N. W. Ayer & Sons, advertising agency, New York.





...*And because of greater purity, HD-90* offers you higher product performance. Pilot HD-90 does a kind of cleaning on many hard surfaces that no other material can do at any concentration. That's *maximum quality level!* It means new sales areas for your products.

Because of greater purity, Pilot HD-90 is whiter in color and has less odor than any comparable product. *It can save you money on perfumes.*

Pilot HD-90 is stable in any weather. Even on hot, sticky, humid days production rolls along in high gear—and your products retain this all-weather protection, too.

Pilot HD-90 gives you greater flexibility in detergent formulations—builds more cleansing and sudsing power into what you make: *Automotive Cleaners, Dishwashing Compounds, Household Cleaners, Steam Cleaners, Bubble Baths, etc. Write for formulas and samples now.*

Packed in polyethylene-lined fibre drums and 5-ply paper bags.

LEADS THE WAY TO BETTER PRODUCTS
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Manufacturers of
Sulfonic Acid
Dodecyl Benzene Sulfonates
Sodium Toluene Sulfonate

W. D. Barry, Mallinckrodt Chemical Works, was chairman of the golf committee, aided by Victor E. Williams, Monsanto Chemical Co.

—★—

Brake Fluid Law Enacted

The vehicle and traffic law of New York state has been amended with a section governing the sale and distribution of hydraulic brake fluid. On and after Jan. 1, 1960, according to the new legislation, all hydraulic brake fluid sold, distributed, or kept for sale in the state must meet the minimum standard of specifications established by the commissioner for heavy duty type brake fluid. Labels of brake fluid products must indicate compliance with these specifications. The legislation, which takes effect Oct. 1, 1959, also provides that any person who sells, distributes, or keeps brake fluid in violation of the amendment will be guilty of a misdemeanor.

—★—

Heyden Appoints Three

The appointment of three product sales managers for the Heyden Chemical Division of Heyden Newport Chemical Corp., New York, was announced last month by R. M. Aude, division vice-president and general manager. New product sales managers and product lines they handle are: T. R. Aalto, fine chemicals; E. L. Barkley, synthetic resin chemicals; and T. H. Risch, organic intermediate chemicals. Also announced was the consolidation of the New York and New Jersey branch offices.

—★—

Williams Joins A. Gross

Ralph O. Williams has joined the sales staff of A. Gross & Co., New York, manufacturers of fatty acid and glycerides. Mr. Williams makes his headquarters in Charlotte, N. C., and handles sales and technical service in the Carolinas, Virginia, and eastern Tennessee. He was formerly plant manager for the Wica Co., in Charlotte.

Monsanto Names Jesdale

Thornton C. Jesdale was appointed last month to the newly created position of assistant director of sales—sales services in the organic chemicals division of Monsanto Chemical Co., St. Louis. Previously assistant to the division's director of marketing, Mr. Jesdale is now responsible for a variety of service functions in the division's sales department. He reports to the director of marketing of the division.



Thorton C. Jesdale

With Monsanto since 1927, Mr. Jesdale served as a sales executive for the former Merrimac division and for the inorganic chemicals division in the New England area. He joined Tru-Scale, Inc., Wichita, Kans., in 1956 as director of sales and returned to Monsanto last year.

—★—

Allied to Buy Harmon

Negotiations were completed last month between Allied Chemical Corp., New York, and The B. F. Goodrich Co., Akron, O., for Allied's acquisition of the business and assets of Harmon Colors, Haledon, N. J., a part of the B. F. Goodrich Chemical Co. Division, Cleveland. Harmon produces organic pigments for automotive finishes, rubber and plastics, printing inks, paints, textiles, and flooring. The company's operations will continue as a unit under the supervision of Allied's National Aniline Division and its products will be marketed by the existing Harmon sales organization under the "Harmon Colors" tradename. Management remains the same with V. C. Vesce, technical director; H. T. Madden, plant manager; and F. F. Bingham, sales manager.

—★—

Chicago Group Holds Dance

The Chicago Drug and Chemical Association held its annual spring dinner dance May 16 at The Ambassador West Hotel in Chicago. Featured at the formal affair were a cocktail party, entertainment, and gifts.

—★—

U. S. Approves Re-Mark

The re-organization of Re-Mark Chemical Co., Inc., Miami, Fla., under a new management structure as recommended by C. Gordon Anderson, trustee, was approved recently by Judge Emett C. Choate of the United States District Court for Southern Florida.

Under the re-organization, Re-Mark has intensified its promotional and distribution program toward expanding its sales. Involved in the re-organization plan, which has been accepted by the creditors and stockholders, is new financing for $350,000 by William C. Webb of Miami, and Melvin Goldberg of Pesticide Sales Corp., New York, through their purchase of the company's Class A and B stock. Additional financing and new credit commitments were also obtained from suppliers as well as cash proceeds from stockholders.

Re-Mark was formed in March 1946 and showed sales increases during its first 11 years in business. In its product line are "Remarco" brands, including "Hurricane" and "Hurri-Green" products produced at the company's fertilizer plant in Goulds, Fla., and the consumer packaging and insecticide plant in Miami.

Harold E. McClean, president of the re-organized firm, has announced a drive to regain previous sales and to introduce new insecticide and fertilizer chemicals in the near future.

MODERNIZE YOUR FLOOR POLISH 8 WAYS WITH

CARDIS POLYMER #8

The demand for high-gloss floor polish that assures longer wear with less care is increasing fast. That's why the demand for Cardis Polymer*8 is increasing fast!

Only Cardis Polymer*8 gives you all these 8 sales and service advantages:

1. **New method of emulsification takes the place of plasticizers — assures perfect compatibility of wax and wax-like emulsions with polymers, shellac, resins — and results in one homogeneous emulsion.**
2. **High molecular weight (about 14,000) as opposed to the widely-used synthetics in 2,000-3,000 molecular weight range. Assures hard, yet tough, uniform film that's longer-lasting even under heavy traffic.**
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Consultants in New Office

John J. Mahoney and Frank L. Cioffi, consulting engineers, have moved to a new office in the St.



John J. Mahoney

Regis Building, 34 Park Place, Newark 2, N. J. Previously located in New York, they offer consultation services in industrial plant design, chemical, mechanical, and structural phases of engineering, and construction supervision.

Mr. Mahoney was formerly with Foster D. Snell, Inc., New York, as chief engineer. Mr. Cioffi was previously with Chem-Flow Designers, Jersey City, N. J., as chief structural engineer, and prior to that with Scientific Design Co., New York.

—★—

Purex Shifts Ad Agencies

Purex Corp., Ltd., South Gate, Calif., has reassigned its advertised brands among agencies currently retained by the company. The new assignments become effective July 1.

"Beads-O-Bleach" dry chlorine bleach will be transferred from Foote, Cone and Belding, Los Angeles, to Edward H. Weiss and Co., Chicago. Weiss already handles several other Purex products and under the new arrangement will also take over "Wrisley" bag soap, which is currently at Fulton-Morrissey Agency, Chicago. Fulton-Morrissey will continue to handle all other products of Allen B. Wrisley Co., Chicago, acquired by Purex in June 1958.

All products manufactured by the John Puhl Products Co., Chicago, bought by Purex last October, will be transferred from Roche, Rickerd and Cleary, Chicago, to Foote, Cone and Belding in Los Angeles.

—★—

Mennen Appoints Three

Mennen Co., Morristown, N. J., made three staff appointments last month. Sylvester Cleary has joined the company as advertising manager; Charles G. Trundle has been advanced to market research manager; and William J. Brodbeck is now product development manager.

Mr. Cleary was formerly an account executive with Reach McClinton & Co., New York advertising agency.

With Mennen for the past five years, Mr. Trundle was previously a brand manager.

Mr. Brodbeck joined the company 10 years ago and was a brand manager prior to his new appointment.

—★—

Du Pont '58 Sales Down

Sales for 1958 of the Du Pont Co., Wilmington, Del., amounted to $1,829 million, a decrease of seven per cent compared with $1,965 million in 1957. Total earnings decreased from $397 million, or $8.48 per common share, in 1957 to $341 million, or $7.25 per common share, last year.

John Duncan, left, of Hazel-Atlas Glass Co. and president of CIBS Association, and William J. Canavan, new products market development manager for Union Carbide Plastics Co., New York, discuss talk Mr. Canavan gave at a recent meeting of the association in New York. Mr. Canavan spoke about plastics and their relation to packaging.



Morton Elects Dabovich

Thomas Dabovich recently was elected vice-president of Morton Chemical Co., Chicago.



Thomas Dabovich

Formerly general sales manager, Mr. Dabovich had been with the company since 1954.

Prior to that he was sales manager of the industrial chemical division of J. T. Baker Chemical Co., Phillipsburg, N. J. Mr. Dabovich also has been associated with G. D. Searle Co., Skokie, Ill., as a research chemist; the U. S. Navy during World War II as a meteorologist; and was western regional sales manager for Sharples Chemical Co., Philadelphia.

—★—

Darling Appoints Four

Four appointments to its sales staff have been announced by Darling & Co., Chicago, manufacturers of glycerine, oleic acid, hydrogenated fatty acids and red oil.

R. P. Kornafel and R. R. Jones have been assigned to the company's office in Elizabeth, N.J., and cover the eastern territory which includes New York, New Jersey, Pennsylvania, Connecticut, and Maryland.

In the southeastern territory, which includes North Carolina, South Carolina, Georgia, Tennessee, and Virginia, J. E. Yockey has been appointed a sales representative.

R. E. Titus has been named to the company's sales staff in Chicago.

For solutions to your polyethylene-fragrance problems rely on Givaudan experience



Polyethylene containers have brought exciting new merchandising opportunities to manufacturers of scores of cosmetic and other products. And the future is bright with still greater possibilities!

But—right now these containers present special problems in fragrance that require specialized knowledge and experience to solve.

Givaudan has conducted extensive research in such problems as perfume loss through permeation, and the behavior of fragrant materials with various vehicles and mixtures under differing conditions in polyethylene containers.

You will find Givaudan's experience invaluable in selecting fragrances that bring lasting satisfaction . . . and continued sales success for your polyethylene-packaged products.

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Florin J. Hailer, Sr., who recently retired as vice-president of Rexall Drug Co., was honored with a party given by BIMS of Boston in February. Mr. Hailer is a charter member of the group. At the event were, left to right: Herbert Bye, M. W. Parsons-Plymouth, Inc.; Barclay E. Mackinnon, NYQ Chemical division, S. B. Penick & Co.; William D. Barry, Mallinckrodt Chemical Co.; Joseph A. Huisking, Fritzsche Bros. (retired); Mr. Hailer; Robert Wilson, Tec Chemical Corp.; Thomas Farrell, "Drug & Cosmetic Industry" magazine; Frank Reid, E. R. Squibb & Sons; M. N. de Noyelles, Chas. Pfizer & Co.; and Victor E. Williams, Monsanto Chemical Co. (See page 167 of March 1959 issue of "Soap and Chemical Specialties" magazine.)

NPCA Completes Elections

A series of special elections was recently completed by the National Pest Control Association, Inc., Elizabeth, N.J., to fill certain vacancies created by the regular elections held at the association's convention last October.

Tom Graham, Graham Pest Control Co., Oklahoma City, Okla., was elected a director in region 10 to complete the unexpired term of Harold Schnorrenberg, Dead Shot Chemical Co., Oklahoma City, who was elected national executive vice-president.

Kenneth Cook, Ransford Pest Control Co., Worcester, Mass., has been elected to complete the unexpired term of Charles W. Houghton, Safety Fumigant Co., Boston, who was elected national secretary-treasurer while serving as regional vice-president of region 1. Before the special election, Mr. Cook was a director of region 1. He has been succeeded by Sidney L. Heal, Griggs and Browne, Inc., Providence, R.I.

A vacancy was also created in region 8 when William O'Reilly, Plunkett Exterminating Co., Minneapolis, a regional director, was elected to the regular two-year term as regional vice-president. In a special election, Edwin N. Barck, The Gopher State Exterminating Co., Minneapolis, was elected a director to fill the vacancy. William Turrie, Wil-Kil Pest Control Co., Milwaukee, continues as alternate director. Terms of office for all those elected in the special elections expire at the end of the 1959 convention this fall.

The association also announced approval of a request by members in Utah that they be transferred from region 9 to 11 since their interests and problems were more closely related to the west coast rather than the mid-west.

—★—

Koppers Research Center

Construction of a new research center at Monroeville, Pa., by Koppers Co., Pittsburgh, Pa., is progressing well, it was announced recently by Paul W. Bachman, vice-president and director of research and development. Included in the unit, which will be located on a 176-acre site near Pittsburgh, are an administration building, three chemical laboratories, a power plant, and associated facilities.

As each unit of the new center is completed, certain operations now carried on at the company's Verona, Pa., research center and offices in Pittsburgh, will be transferred, Dr. Bachman stated.

Profit for Canadian Firms

Canadian companies which manufacture pest control chemicals were reported last month as having shown an overall net profit of 3.3 cents per sales dollar on their 1958 operations. The figure was based on an audited survey conducted recently under the auspices of the Canadian Agricultural Chemicals Association, Montreal, in which about 25 per cent of Canadian firms engaged in pesticide manufacture participated. These companies showed a total net income of $411,900 on total sales of $12,159,725 last year.

Total dollar sales as reported by the Dominion Bureau of Statistics for agricultural dusts and sprays, livestock treatments, herbicides, household and industrial insecticides, rodenticides, and sundry chemicals, were nearly twice the amount reported by the firms which participated in the CACA survey.

—★—

Aniline Appoints Bonnar

J. Robert Bonnar has been named director of marketing for the dyestuffs and chemical division of General Aniline & Film Corp., New York, it was announced last month by H. G. Shelton, division general manager. Sales manager for dyestuffs since 1953, Mr. Bonnar now supervises directly all divisional sales and related marketing functions. He joined General Dyestuff Corp. in 1935 as manager of the technical department and previously was with American Printing Co., Fall River, Mass.

—★—

New "Mintalia" Fragrance

A new mint fragrance called "Mintalia" has been introduced by Aromatic Products, Inc., New York. For application in formulations of chemical specialties and toiletries and cosmetics, the fragrance is available at $3.50 per pound in five pound lots. Trial quantities may be obtained from Aromatic Products, 235 Fourth Ave., New York 3.

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Packaging Show

(*From Page* 165)

demonstrated five common tasks normally performed by hand, which may now be done with the aid of a pressure package.

The 40-foot Crown exhibit included a 25-foot stage divided into five stations. Each had a backdrop panel showing the manual method of pumping up a tire, shining shoes, administering first aid, cooking pancakes and making coffee.

Crown demonstrators employed compressed air, shoe polish, spray bandage, pancake batter, silicon cooking lubricant and instant liquid coffee—all in pressure packages—to demonstrate the modern method of handling these common chores.

At the beginning of each "live" Crown show, a demonstrator switched on footlights and overhead spots which gave the exhibit a stage show atmosphere. As she advanced to each station, the demonstrator lighted up the subject featured at that station, and demonstrated how the modern aerosol makes light work of what were formerly messy, time-consuming tasks.

Can innovations for packaging other specialties shown by Crown included the "Ful-Safe" 15-ounce can now being used for automotive products, and a variety of metallic finishes for packer cans and aerosol containers.

The six-ounce extruded aluminum can which has been added to American Can Co.'s line of aerosol containers, will be manufactured by Canco's Bradley-Sun division. The can will be in production by the end of the year.

The can company said that its move in adding an extruded aluminum can to its aerosol line was taken because of several advantages offered by the metal for packaging dentifrices, cosmetics and pharmaceuticals. These are expected to be the leading uses for the new can.

Elimination of the soldered side seam margin, Canco said, makes the container esthetically more pleasing and thus more acceptable as a container for hair sprays and fine cosmetics. Because of the elimination of the side seam, the use of all-around lithography is possible. Cans are lithographed by offset presses after forming.

An additional advantage to the packer is the weight saved in shipping. Canco said the weight of 1,000 six-ounce aluminum pressure cans is approximately 50 per cent that of the same number of tin plate pressure cans.

Canco claims it has licked one of the "major stumbling blocks" in the development of aluminum containers: adherence of interior coatings.

Price of the new aluminum pressure can is said by Canco to be competitive with other extruded aerosols now on the market. However, the company pointed out, the price is higher than the conventional tin plate can due to higher material costs.

Florasynth Elects Payne

Arch Payne has been elected assistant vice-president of Florasynth Laboratories, Inc., New York, manufacturers of basic materials, fragrances, and aromatic specialties for the soap, cosmetic and drug industries. Mr. Payne has been general sales manager of the firm since 1947, a position he retains with his new duties.

Arch Payne



"The key to whether or not aluminum will eventually be used for large-volume processed items will depend to a large degree on the future price actions of the aluminum producers," an official of American Can Co., New York, told a session of the Packaging Conference, April 14.

The speaker, F. B. Newcomb, vice-president in charge of commercial development, declared that "can manufacturers are anxious to have an alternate for tin plate and are leaving no stone unturned to develop all of the facts about aluminum."

The Canco official said that "The long term technical interest in aluminum of our company over the past thirty years, and the quickened interest in the last several years, has stemmed from the economic possibility that aluminum would sometime compete pricewise with tin plate for the rigid container market."

"As we sum up the status of aluminum as a rigid-container making material," Mr. Newcomb said, "we find that aluminum cans are being used in the United States today for a few products. They will be used increasingly for other products where the metal produces special advantages either technical; or economic, for example, lower shipping weight, which is about one third of the weight of tin plate of the same gauge; or from a merchandising standpoint, primarily in replacing tin plate on a gauge-for-gauge basis."

Convenience will be and must be the keynote of all attempts to educate the public more fully to pressurized packages, according to R.J. Hennessy of Lederle Laboratories Division of American Cyanamid Co., Pearl River, N. Y. Mr. Hennessy presented a talk entitled "Horizons for Aerosols" at the AMA National Packaging Conference on Tuesday, April 14. He predicted, in fact, that aerosol packaging will be commonly accepted and known as "convenience packaging." The speaker gave a list of estab-



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OIL WILD ROSE No. 55
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OIL SWEET PEA No. 55
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LAVENDER No. 55
LEMONGRASS No. 55
NEROLI No. 55
SANDALWOOD No. 55
SASSAFRAS No. 55
YLANG YLANG No. 55

PARA BLOCKS
OIL APPLE BLOSSOM No. 4314
OIL LILAC No. 4315
OIL NARCISSUS No. 4316
OIL NARCISSUS No. 4317
OIL ROSE No. 4318
PINE BOUQUET No. 4139
BOUQUET R.G. No. 4140
BOUQUET C.R. No. 4140

LIQUID SOAPS
OIL HONEYSUCKLE No. 61
OIL MINT No. 523
OIL NARCISSUS No. 614
OIL VERMONT PINE No. 55
IMITATION GERANIUM No. 24

SHAMPOO ODORS
OIL BOUQUET APPLE BLOSSOM No. 8240
OIL BOUQUET ALMOND No. 8262
OIL CLOVER No. 888
OIL CORYLOPSIS No. 55
OIL BOUQUET H.O. No. 8267
OIL BOUQUET M. No. 55
OIL BOUQUET NARCISSUS No. 55
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lished and less well known pressure packaged product groups in the household, personal, pharmaceutical and commercial field.

Mr. Hennessy gave some guiding points in the development of a successful pressure packaged product: First, know your product and what it will do. Decide how to dispense it: as spray, foam or liquid. Make thorough compatibility studies. These must cover propellant, valve and container. Investigate the possible need for reformulation of your product to make it compatible with a certain propellant. Container and valve materials may be mandatory or you may have a choice between tin, aluminum, plastic coated glass, or plastic materials.

Next comes package design and development. Art design, caps, colors, must be decided upon. Package testing must be done. Physical testing for strength of container and application characteristics of the system are a must. An over-all cost study should then be the basis for the final choice of package, container, valve, propellant, etc. This cost study may rest on a decision to do your own packaging and you may obtain quotations from a contract packager. Mr. Hennessy said "If this is your first product you can get wonderful information and service from a reputable contract packager, of which there are many. He has the know how, the supplies, the necessary equipment, and he can give you samples much more promptly because of his experience than if you did it yourself."

The next step is test marketing the product. Then comes production either on the maker's own line or by a contract packager. Mr. Hennessy proferred some warnings on mechanical pitfalls threatening a filling operation. To be a successful aerosol manufacturer detailed specification for all packaging material supplies must be developed, as well as quality control procedures. In the preparation of final specifications it is well to consult material supply manufacturers. Mr. Hennessy stressed their importance as a source of information.

Today's manufacturer must orient his packaging philosophy more toward the retailer's needs than ever before, according to Michael P. Frawley, executive vice-president of B. T. Babbitt, Inc., New York. Mr. Frawley acted as a substitute for Babbitt's president Marshall Lachner, on the presidents' panel session which opened the American Management Association's National Packaging Conference on April 13. Theme of the panel was "Top Management Appraises Packaging."

"Although packaging may very well be your most important contact with the customer, today's retailer exercises vastly more influence on that packaging, than was true in the past," Mr. Frawley told the meeting. "Since much of the cost of modern distribution is the cost of handling packages, the retailer's problems must be of very real concern to the manufacturer and to his packaging people. In a word, it may very well be that in packaging today, a knowledge of the chain's warehouse, of the chain's profit picture, of the realities of modern marketing are just as important as a skill in graphics."

Mr. Frawley pointed out that tremendous sales are concentrated in the hands of a few retailers. Some three per cent of the nation's food companies do about 30 per cent of the total food business. Retailers like the major chains who handle this enormous volume make profits of about one penny in a dollar's worth of sales. Obviously, retailers with such power to sell or refuse to sell and with such a tiny profit margin call for a packaging policy which is geared to their actual needs.

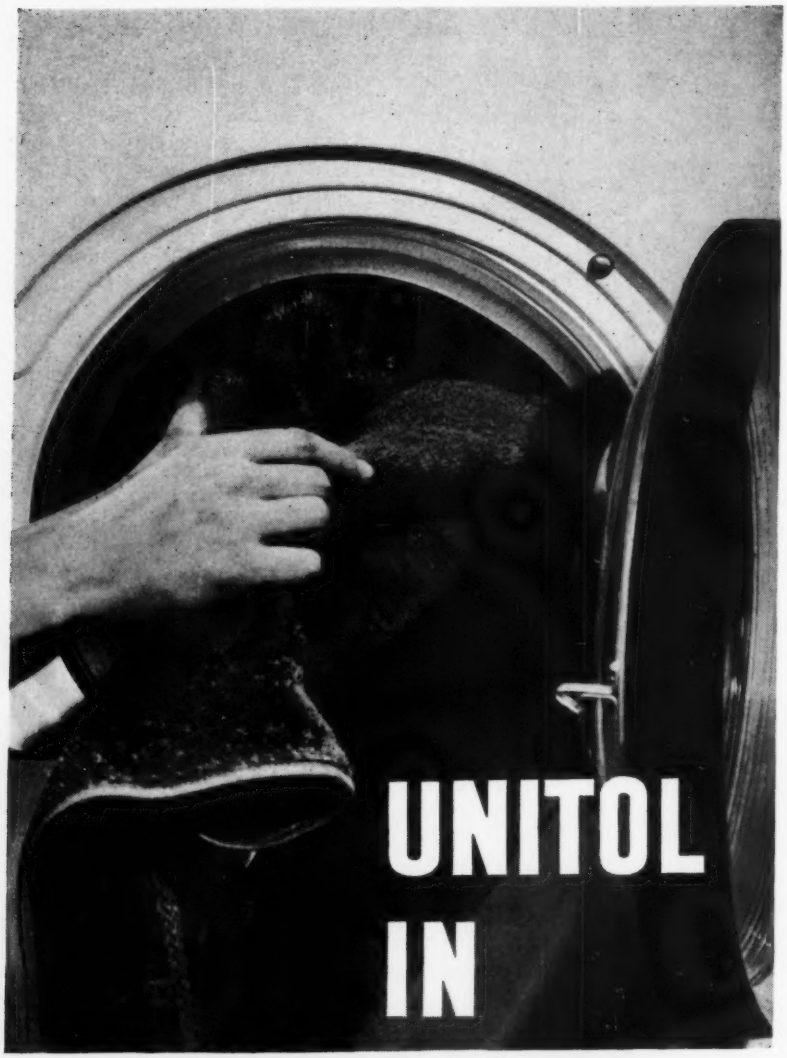
Speaking of a packaging problem particularly prominent in the soap field Mr. Frawley said: "In all segments of the soap business, deals are a continuous and vital part of the industry. Whether we are offering two cents off the package, or five cents, or one free with eleven, the deals are continuous. Almost invariably, too, the deal is made part of the label. Thus, for all practical purposes, deal merchandise may differ from month to month.

"Now with perfect sales planning at the factory and retail level, this merchandise should be all off the shelf at the moment the new deal comes in. Otherwise the retailer has important problems of warehousing."

Mr. Frawley gave case histories showing the packaging problems Babbitt's products have encountered and how they were met.

On the dais for fifth annual men's day luncheon of Cosmetic Career Women at Waldorf Astoria Hotel, New York, April 7, were, standing l. to r.: Catherine P. Moran, Givaudan-Delawanna; H. Gregory Thomas, president, Chanel, Inc.; Theresa D. Grimes, Clairol, Inc.; Gina Kohrman, J. Walter Thompson. Seated: Philip Cortney, president, Coty, Inc.; Shelbey T. Gray, FDA, speaker; Kathryn R. Colton, Morningstar-Paisley, Inc., luncheon chairlady, and S. L. Mayham, vice-president, TGA. About 300 members and guests attended.





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Detergents for Cotton
(*From Page* 65)

repulsion between the surfaces of soil and fabric occurs.

This is not only an effective way of separating soil from fabric surfaces but of peptizing soil as well, as shown in Figure 2. Adsorption of the ionized surfactant breaks up colloidal aggregates, then disperses and suspends the finely divided particles. Each particle of soil tends to repel all other similarly charged particles, as well as to repel the fabric surface.

The greater the ability of a surfactant to increase the negative zeta potential, the greater its detergency. Thus, to obtain maximum cleaning effectiveness, the surfactant should not only have a large hydrocarbon chain to cause its strong adsorption on soil and fabric surfaces, but it should be anionic as well to take advantage of this electrical effect. Therefore, the third requirement of an idealized cotton detergent formulation is that it contain an *anionic* surfactant.

Role of Polyphosphates

The ability to increase the negative zeta potential of surfaces is an important function of inorganic polyphosphate builders. In addition, these versatile materials sequester hard water cations efficiently, a property not possessed by surfactants. When adsorbed on soil and fabric surfaces hard water cations such as calcium, magnesium and iron tend to neutralize the negative zeta potential, thus reducing the electrical repelling forces between surfaces. As illustrated in Figure 3, these cations can be visualized as bridges responsible for a sturdy bond holding soil to fabric.

Polyphosphates are highly effective in de-ionizing or sequestering these polyvalent cations, thus breaking soil - cation - fabric bridges. Also, they help prevent soil redeposition caused by hard water cations. Although anionic surfactants can rupture soil-cation-

fabric bonds by the mechanism of ion exchange, it is a much less efficient process than sequestration. Surface active mono-sulfates and mono-sulfonates are neither sequestrants nor are they as effective as soaps in precipitating hard water cations. It is difficult to imagine a surfactant structure having the high degree of sequestering effectiveness possessed by polyphosphates. Therefore, it seems likely that, to obtain maximum cotton detergency effectiveness, the ideal detergent formulation should contain both a surfactant and an efficient sequestrant. This is requirement number four.

In summary, a design guide is suggested for better cotton detergents. Analysis of the important roles of surfactants and builders and the physico-chemical principles involved in the cleaning process form the basis of this design guide. An idealized cotton detergent is visualized as follows:

1. The detergent formulation should contain both a surfactant and a highly efficient sequestrant for hard water cations.
2. The surfactant should have at least a moderate degree of surface activity as manifested by its wetting and emulsifying properties.
3. The hydrocarbon chain of the surfactant should be as large as possible without sacrificing a moderate degree of wetting and emulsifying activity, and other desirable surface active characteristics.
4. The surfactant should be anionic.

There is reason to believe today's detergents do not satisfy fully all these requirements. Thus, in the future better detergents are a real possibility. Improved materials can become available commercially only as we learn how to manufacture them on a large scale and at a competitive price. However, ours is an active and healthy industry. This is our greatest assurance that tomorrow's detergents will be better than those of today.



DANGERS of launching a NEW PRODUCT

Snell Research can help overcome them

Here's how, in some typical case histories of Snell clients:

Product Research and Development—A few years ago Snell was retained to develop new products, applications, and markets for sugar. Extensive research and development work by Snell resulted in the creation of a new synthetic detergent—based on *sugar!*

Product Application—A Snell client in the paper industry, for whom we had developed a fine additive, wanted to explore uses in other fields. Unfortunately, their highly qualified staff's experience was limited to the one field. Snell, with experts in practically every product field, found the new product has potentialities as both a good emulsifier and a paint plasticizer. Only the very largest manufacturing companies can duplicate the breadth of experience and background the Snell "brain-trust" of technical experts can offer you!

Product Improvement—One Snell client found their product, an adhesive bandage, slipping in quality. Tape was going gooey in storage on druggists' shelves. Snell research helped this client bring his product quality up to equal the best on the market, and retain his share of sales.

Product Evaluation—A Snell brewery client wanted to expand production and take advantage of a more efficient production technique but feared the taste of the beer might suffer. Snell food technologists, taste panels, and engineers checked the new process and hundreds of samples of beer made under new and old systems, recommended the switch to the more profitable modern process. The change went unnoticed by the customers, and sales continued to climb.

Market Research—A Snell client with a waste product had briefly considered building a plant to use it to manufacture another product; but had given up after their own brief survey showed the new product to be already overproduced. When they consulted Snell for checking, however, Snell predicted there would be a shortage within three years. The client waited two years, built the plant—and now has a profitable new product instead of a waste!

Toxicology—One of the largest frozen food companies began getting complaints on the flavor of one of their green vegetables. Since hundreds of thousands of dollars were at stake, they consulted Snell to find out what was wrong. Snell by analyzing tests, and checking on the farm, was able to prove that the taste—actually toxic—was due to a new type of insecticide sprayed on the fields hundreds of yards away on a windy day long before the harvest!

Engineering—A large midwestern firm desired to produce its own brand of instant coffee, to possess outstanding flavor, body, and bouquet. They engaged Snell to design their extraction line, which is now economically producing a superior product, and have since doubled capacity. Since that time, two additional plants have been modified under our supervision to increase production and improve product characteristics.

What's Your Product Problem?—Whatever it is, and whatever your product field—chemicals, chemical specialties, personal products, pulp and paper, protective coatings, plastics, textiles, foods, petroleum, rubber—Snell has men who "know the score" in that field, and who can work with you creatively and profitably in developing, producing, protecting, and marketing new ideas. This broad experience can be decisive in protecting not only your ideas, but also the thousands of dollars you spend developing them. And the cost of Snell service is less than you might imagine! Half the jobs we do cost less than $1000!

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Colgate to Split Stock, to Sell Drugs

STOCKHOLDERS of Colgate-Palmolive Co., New York, last month, voted in favor of the recommendation of the board of directors that the company's common stock be split three for one, and that the authorized common stock be increased from three million to 12 million shares after the split. Shareholders will receive two additional shares of common stock for each share held as of May 1.

During the meeting, Edward H. Little, chairman and president, announced the establishment of a drug division for Colgate's entry into the proprietary and ethical drug fields. Several proprietary drug products for sale without a prescription will be developed by the new division and the company also will seek acquisition of an ethical drug firm, Mr. Little stated.

Also announced at the meeting were sales and earnings figures for the first quarter of this year. Consolidated sales totalled $141,650,000 compared with $128,296,000 in 1958 and consolidated net income amounted to $5,006,000, or $1.85 a common share, compared with $4,419,000, or $1.72 a share, a year ago. Shares outstanding at the end of the first quarter of this year were 2,650,900, including 127,000 shares issued in connection with the recent acquisition of Wildroot Co., against 2,503,000 shares outstanding at the end of the corresponding 1958 quarter.

Herbert P. Nack has been appointed general manager of the new drug division. Previously director of the professional products division of Johnson & Johnson, New Brunswick, N.J., Mr. Nack also served there as consultant to the president and executive committee on matters pertaining to the drug industry. He has also been associated with William S. Merrill Co., a division of Vick Chemical Co., New York, and Chas. Pfizer & Co., New York.

John E. Bierwirth, chairman of the board of National Distillers and Chemical Corp., and Frank Pace, Jr., president of General Dynamics Corp., were elected to Colgate's board of directors at the annual meeting.

—★—

Foragers Schedule Picnic

The annual picnic and outing of the Foragers of America has been scheduled for Saturday, June 27, at the Timber Grove Club in Great River, Long Island, N. Y.

—★—

A. E. Anderson Dies

A. E. Anderson, who retired in 1921 as a vice-president of Procter & Gamble Co., Cincinnati, died of a cerebral hemorrhage April 25 in that city. He was 87 years old. Mr. Anderson was active in civic and charitable organizations in Cincinnati. He is survived by his wife and two sons.

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Atlas Names McGrath

The appointment of Cornelius D. McGrath as field sales manager of the chemicals sales department of Atlas Powder Co., Wilmington, Del., was announced recently by Edward J. Massaglia, vice-president and general manager of the chemicals division. Mr. McGrath joined the company last year as manager of the industry group which is responsible for chemicals sales to the cosmetic and pharmaceutical industries. Previously he was with Chas. Pfizer & Co., New York, and prior to that was associated with Orbis Products Corp., New York.

Theodore P. Malinowski, assistant director of the chemicals division's product development department, succeeds Mr. McGrath.

Aqueous Floor Polishes

(*From Page* 141)

Alkali Soluble Resins

Alkali soluble resins can be used effectively with these polymer latices to improve leveling and spreadability. Many of these resins, however, are much darker in color than the acrylics and blush badly in the water spot test. Shellac spots badly even from an ammonia cut. The borax shellac cut as used in the 80 per cent shellac/20 per cent formulation has extremely poor water resistance properties when first applied. As the film ages on the floor, however, the shellac undergoes polymerization with the result that it becomes water insoluble and the film becomes dark and difficult to remove. Many of the other alkali soluble resins have poor water resistance or are dark in color.

Several years ago Reichhold Chemicals, Inc., developed a new type of alkali soluble resin, almost white in color, and having excellent water resistance. Chemically, a modified alkyd resulting from the esterification of phthalic anhydride with polyols, it was named "Waterez." This resin shows no change while aging on the floor and is free from the economic and quality control problems associated with natural products.

The product can be employed to harden a polish film without darkening it. Moreover, properly formulated cuts of these alkyds in ammonia will spontaneously spread on certain substrates. This striking phenomenon can be demonstrated by applying a drop of the solution on a piece of the black test paper commonly used in the industry. The drop will spontaneously spread over the entire surface of the paper. This will happen on any given substrate, providing the critical surface tension for that substrate is not exceeded.

Future Outlook

Looking into the future, several new developments can already be discerned. Copolymers of acrylics with styrene and other monomers are certainly included. Some of these are already available; others, of improved performance characteristics, are just around the corner. The objectives of these modifications will be to combine the good features of styrene and the acrylics and, at the same time, to lower price and improve performance.

Another important contribution to the industry would be the elimination of plasticizer from the finished formulations. This problem is being attacked in several ways.

Consideration is also being given to making polymer emulsions which will spread over vinyl tile and other flooring surfaces which are presently difficult to coat. The recent elucidation of the physicochemical principles involved have given impetus to such a development.

Finally, since gloss is the prime performance characteristic of floor polishes, and since polymer systems possess a potential for gloss much higher than that of wax systems, it is logical to expect a big improvement in this area in the foreseeable future.★★



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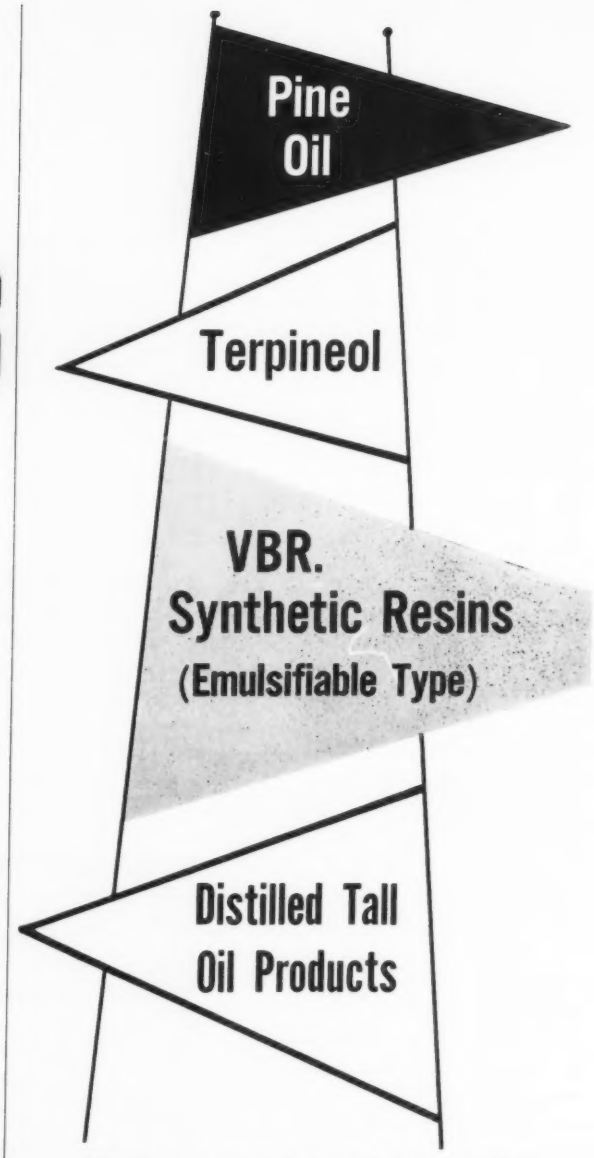
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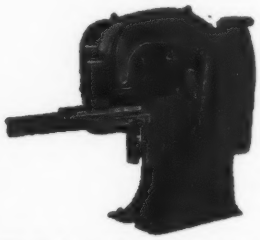
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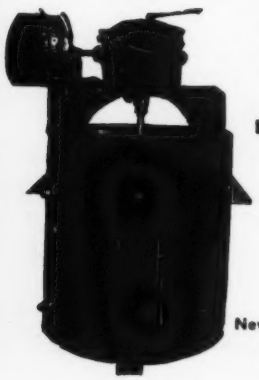
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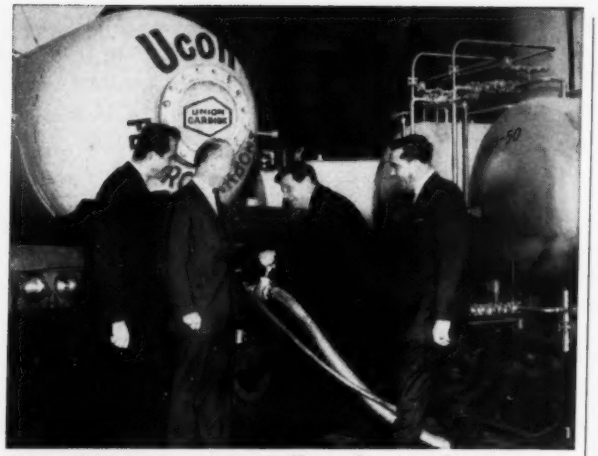
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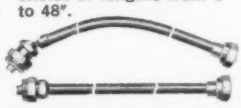
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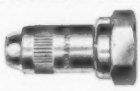
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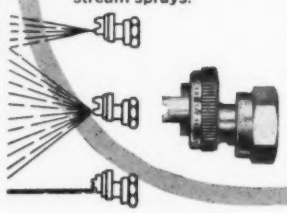
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Textile Resistance Test

(*From Page* 117)

and carpet beetle attack. *Jour. Econ. Ent.*, vol. 35, No. 2, pp. 249-255.

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★

New Phenolic Germicide

A new phenolic germicide designed to control staphylococci and other forms of pathogenic bacteria in general hospital disinfection was introduced recently by Miller Soap Co., Reading, Pa. Trade named "MPG", the concentrated germicide is based on sodium ortho benzylxparachlorophenate, isopropyl alcohol and coconut oil soap. Use dilution recommendations and other information on the disinfectant are contained in a data sheet available from the maker. "MPG" is packaged in five, 10, 15, 30 and 55 gallon drums.

★

Johnson "Best Boss"

Lowell F. Johnson, director of industrial relations for American Home Products Corp., New York, was honored recently by the New York Chapter of the National Secretaries Association as "Boss of the Year." Mr. Johnson was nominated for the award by his secretary, Beverly Albelo, and received a majority vote of the chapter's 250 members.

Optical Brighteners

(*From Page* 70)

5. J. P. G. Beiswanger and H. Hemmendinger, "Photometric Evaluation of Brightening Agents," *Proc. Chem. Spec. Mfgrs. Assoc.*, June 1951.
6. H. E. Millson and E. I. Stearns, "A Study of Fluorescent Dyes," *American Dyestuff Reporter*, Vol. 37, P. 423 (1948).

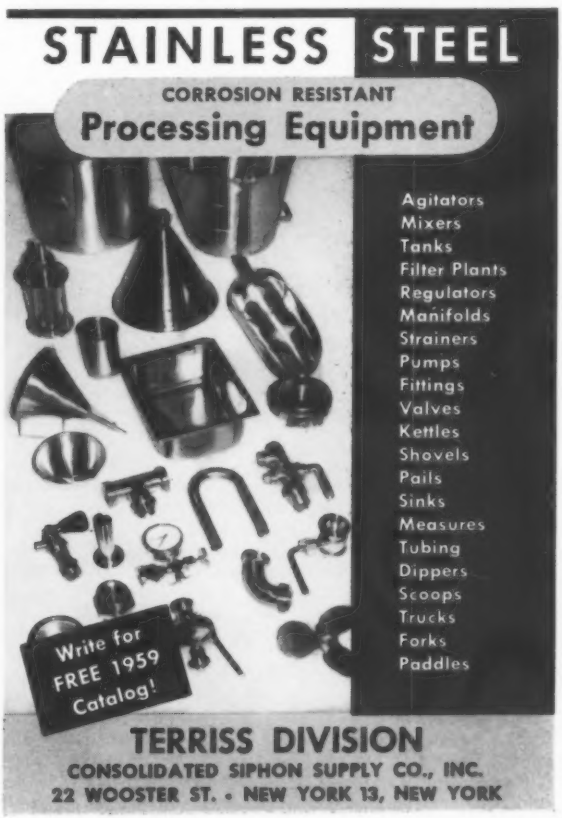


UCON Brand Propellants newest source for Stalfort.

With this delivery of UCON Propellants 12-11, Stalfort Pressure-Pak, Inc., taps the nation's newest propellant supply: Union Carbide Chemicals Company. Stalfort, one of the largest custom-filling operations in the U. S., fills all types of containers; packs food, pharmaceutical, household and industrial aerosols, and is noted for advanced quality-control techniques. In foreground above, Herb Huffman (left), Stalfort Purchasing Agent, accepts delivery from Arthur B. Chivvis, of Union Carbide Chemicals Company. Looking on are, l. to r., Daniel J. Kelly, CARBIDE Technical Representative, Walter Hale, Stalfort Production Coordinator, and John Hart, Stalfort Quality Chemist.

For information about America's newest aerosol propellants, write: UCON Propellants, Union Carbide Chemicals Company, Division of Union Carbide Corporation, 30 E. 42 St., N. Y. 17, N. Y.

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COMING MEETINGS

American Chemical Society, national meeting, Atlantic City, N. J., Sept. 13-18.

American Oil Chemists Society, annual meeting, Statler Hilton Hotel, Los Angeles, Sept. 28-30; spring meeting, Baker Hotel, Dallas, April 4-6, 1960.

Canadian Manufacturers of Chemical Specialties, second annual meeting, Royal York Hotel, Toronto, Nov. 2-4.

Chemical Specialties Manufacturers Association, 45th midyear meeting, Drake Hotel, Chicago, May 18-20; 46th annual meeting, Mayflower Hotel, Washington, D. C., Dec. 7-9.

Glass Container Manufacturers' Institute, The Greenbrier, White Sulphur Springs, W. Va., May 19-22.

Industrial & Building Sanitation - Maintenance Show and Conference, N. Y. Trade Show Building and New Yorker Hotel, New York, Sept. 22-24.

National Agricultural Chemicals Association, 26th annual meeting, French Lick - Sheraton Hotel, French Lick, Ind., Oct. 21-23.

Manufacturing Chemists' Association, 87th annual meeting, The Greenbrier, White Sulfur Springs, W. Va., June 11-13.

National Association of Variety Stores, 9th northwestern merchandise show, Leamington Hotel, Minneapolis, July 12 - 14; 19th southwestern show, Baker Hotel, Dallas, July 19-21; 18th southeastern show, Biltmore Hotel, Atlanta, July 26-28; 71st Chicago show, La Salle Hotel, Chicago, Aug. 2-5.

National Hotel Exposition, 44th annual show, Coliseum, New York, Nov. 2-6.

National Packaging Show, Convention Hall, Atlantic City, N. J., April 4-8, 1960.

National Pest Control Association, annual convention, Biloxi, Miss., Oct. 19-22.

National Sanitary Supply Assn. 37th annual convention, Fountainebleau Hotel, Miami, Fla., May 22-25, 1960.

Packaging Institute, 21st annual forum, Statler Hotel, New York, Nov. 17-19.

Packaging Machinery Manufacturers Institute, show, Coliseum, New York, Nov. 17-20.

Society of Cosmetic Chemists, New York Chapter, monthly meetings, New Yorker Hotel, Sept. 9, Oct. 7, Nov. 4.

Synthetic Organic Chemical Manufacturers Association, monthly luncheon meetings, Roosevelt Hotel, New York, June 9; Sept. 15; Oct. 13; Nov. 4; and Dec. 2.

Toilet Goods Association, scientific section, Waldorf-Astoria Hotel, New York, Dec. 1, 1959; May 11, 1960.

Western Packaging & Materials Handling Exposition, Civic Auditorium, San Francisco, Aug. 11, 12 & 13.

The big swing is to
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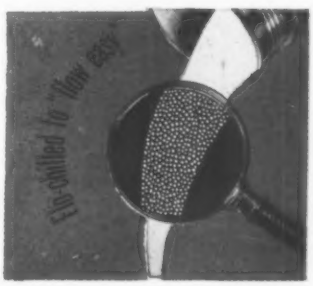


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Tale Ends

NO shortage of future Johnsons! Sam Johnson, vice-prez of Johnson's Wax is the father of a fourth child born last month. His other three are four, three and one year old respectively. And now the new arrival. Sam was the recipient of many congratulations at a cocktail party held at the Sheraton-Bismarck Hotel in Chicago last month. He is a grandson of the founder of the wax company.

* * * * *

On the thirtieth anniversary of its founding, Puro Company of St. Louis recently invited representatives of its ten original suppliers of raw materials who are still supplying the company to a party held in the Zodiak Room of the Chase Hotel, St. Louis. On hand to celebrate 30 years were Al Saeks, president and founder of Puro, and vice-presidents Sam Saeks, Norman Wilson, Howard Zachritz and William Kitz and the rest of the Puro gang. Congratulations!

* * * * *

Jim Wheeler, prez of Essential Chemicals of Milwaukee handed out cards at the recent NSSA meeting in Chicago which read "Use our detergents and have the cleanest ulcers in town. Essential Chemicals Co., Milwaukee, Home of the Braves."

* * * * *

Joe Fuld, vice-president of Fuld Brothers, Inc., Baltimore, has just returned from a month abroad. He spent the full month in Italy. No France, no England, no Switzerland.—Just Italy! We're curious as an old hag and trying to find out why.

* * * * *

Paul Mayfield, vice-president of the Hercules Powder Co., former president of the National Agricultural Chemicals Assn. and horseman of note, has been elected a member of the board of directors of Delaware Park, the fancy-dan race track located near Wilmington, Del. Mr. Mayfield is the owner of the race horse, "Mr. Muscles," and a number of others of the breed. In fact when last seen by our reporter, he admitted that he was up to his ears in horses.

* * * * *

Irving Wexler, chairman of Buckingham Wax Co., Long Island City, N. Y., and a well known operator in the floor wax business for over 36 years, suffered a heart attack while vacationing in Palm Beach, Fla., in March. He spent a couple of weeks in the hospital in Florida and is now resting at home, 118-11 84th Ave., Kew Gardens, N. Y. He'd love to hear from his friends in the chemical specialties industry.

* * * * *

Another near casualty of the chemical specialties biz, spotted hobbling around the trade show of the National Sanitary Supply Assn. in Chicago, last month, was Linus O. Smith, head of T. F. Washburn Co. Seems "Linc" while skiing in Switzerland clipped a pole marking a turn in a slalom race, and shot out and over a 100 foot cliff. In addition to laying open his head on the pole, he cracked a couple of ribs and broke his leg, which has had to be re-broken and reset. P.S. "Linc" is still a ski enthusiast.

* * * * *

At long last, the term, "cleaning compounds," has come into its own! The division of CSMA heretofore known as the "Soap, Detergents and Sanitary Chemical Products Division" plans to change its name come next January 1. The new moniker is "Detergent and Cleaning Compounds Division." All that is needed is a change in the CSMA constitution by the membership. The CSMA Board already put its OK on the change. And we note with sadness that poor, old soap gets the ax once again.

* * * * *

Detergency evaluation work and tests up to now may be subject to serious doubts, according to William C. Powe of the Whirlpool Corp., clothes washer manufacturer, in an address before the American Chemical Society early in April at Boston. The graying of cotton clothes results from unremoved or re-deposited soil which electron microscopes show to be thin flakes of clay, he says. All test soils have been composed of carbon black which differs widely from clay both chemically and physically. And therein might lie a few detergent laboratory headaches!

* * * * *

The ring of crooks in Montreal who have been trying to victimize American manufacturers of chemical specialties and the like by using the name "Safeway Chain Stores" has apparently been stymied by wide publicity given to their operations. According to Ralph Brown, Safeway vice-prez in the U.S., publicity did it and also brought forth a fraud order from the U.S. Post Office Department against "H. David" and "Canadian Buying Syndicate," names used while posing as a Safeway buyer.

* * * * *

Janice Kahn, spouse of Hoboken, N. J., wax tycoon, Jack Kahn (Windsor Wax Co.), is now studying for a Master's Degree at Monclair (N. J.) State Teachers College. When she completes her course she will be qualified to teach art in the New Jersey schools. An honor graduate of Carnegie Institute of Technology, Mrs. Kahn majored in art there. She is a straight A student at Montclair, and is the only grandmother in her class!

* * * * *

New titles galore at the 45th CSMA meeting now under way in Chicago. No more just plain chairmen of the administrative committees of the six divisions. Now they are designated "Executive Board Chairmen", not to be confused with members of the CSMA's Board of Governors, of which the chairmen are members.

* * * * *

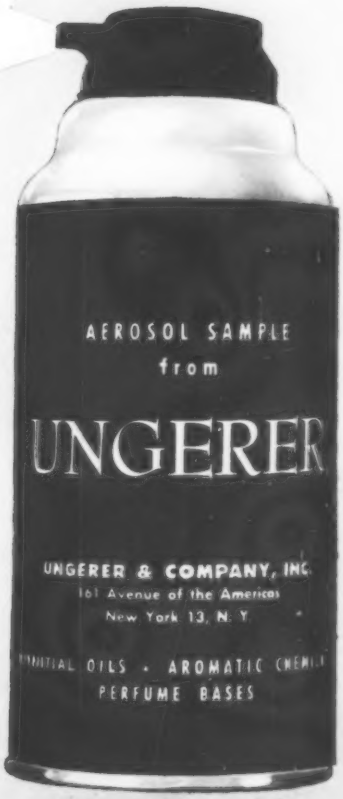
Stupid questions at stockholders meetings are not uncommon. The annual meeting of Colgate-Palmolive stockholders last month was no exception. A lady stockholder asked Chairman Ed Little why Colgate didn't put out a white, unperfumed soap like their competitors. Instead of blowing his top, Senor Little remained icily calm and informed the lady that there was no such animal as an unperfumed white soap on the market at present and that the competitive soap to which she referred was very definitely perfumed. We doubt that she believed him.

CSMA Governors bask in the sun in Florida. At the March meeting at Clearwater, Fla., top left to right: Jim Ferris, Alice MacNair, Dick Werkheiser, George Fiero, Ira MacNair, Gordon Baird, John Rodda. Bottom row: Mimi Klarmann, Helen Fiero, Ann Baird, Pauline Ferris, Mary Selma Beach, Grace Rodda. Photo by Dr. Emil Klarmann.



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